DOCUMENT RESUME

ED 412 423 CE 075 004

TITLE	Information Processing. Guide to Standards and Implementation. Career & Technology Studies.
INSTITUTION	Alberta Dept. of Education, Edmonton. Curriculum Standards Branch.
ISBN	ISBN-0-7732-5284-3
PUB DATE	1997-00-00
NOTE	452p.
PUB TYPE	Guides - Classroom - Teacher (052)
EDRS PRICE	MF01/PC19 Plus Postage.
DESCRIPTORS	Behavioral Objectives; *Competence; Competency Based Education; Course Content; Curriculum Guides; *Employment Potential; Entry Workers; Foreign Countries; *Information Processing; *Information Science Education; *Job Skills; Learning Activities; Learning Modules; Secondary Education; Teaching Methods; Technical Education; Vocational Education
IDENTIFIERS	Alberta

ABSTRACT

This Alberta curriculum guide defines competencies that help students build daily living skills, investigate career options in information processing occupations, use technology in for information processing effectively and efficiently, and prepare for entry into the workplace or related postsecondary programs. The first section provides a program rationale and philosophy for career and technology studies, general learner expectations, program organization information, curriculum and assessment standards, and types of competencies. The second section provides opportunities for students to study technological trends, learn technological skills, learn to input, process, and output information in the areas of systems operations, text and data input, productivity software, applied processing, dynamic environment, and programming (procedure-oriented and object-oriented). It includes a rationale and philosophy for the information processing strand, strand organization, and planning for instruction. The 48 modules are organized into introductory, intermediate, and advanced levels that cover a comprehensive set of competencies in the field of information processing. Modules also define exit-level competencies, specify prerequisites, and outline specific learner expectations. Other sections of the guide contain the following: module curriculum and assessment standards; assessment tools; linkages and transitions with other strands, other educational programs, and to the community, the workplace and the credentialing process; a learning resource guide listing 105 resources keyed to modules, plus sources for further information; and sample student learning guides. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 412 423

CAREER & TECHNOLOGY STUDIES

INFORMATION PROCESSING

GUIDE TO STANDARDS AND IMPLEMENTATION

1997

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL
HAS BEEN GRANTED BY

C Andrews

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

CE 075 004

Alberta
EDUCATION
Curriculum Standards Branch

BEST COPY AVAILABLE

ALBERTA EDUCATION CATALOGUING IN PUBLICATION DATA

Alberta. Alberta Education. Curriculum Standards Branch.
Information processing : guide to standards and implementation.

(Career and Technology Studies)
0-7732-5284-3

1. Electronic data processing—Study and teaching—Alberta. 2. Computers—Study and teaching—Alberta. 3. Electronic publishing—Study and teaching—Alberta. 4. Programming (Electronic computers)—Study and teaching—Alberta. I. Title. II. Series: Career and Technology Studies Program.

QA76.27.A333 1997 001.64

This document was prepared for:

Administrators	✓
Counsellors	✓
General Audience	
Parents	
Students	
Teachers	✓

Program/Level: Career and Technology Studies/Secondary

Copyright ©1997, the Crown in Right of Alberta, as represented by the Minister of Education. Permission is given by the copyright owner for any person to reproduce this publication or any part thereof for educational purposes and on a non-profit basis.

This document supersedes all previous versions of the *Career & Technology Studies Guide to Standards and Implementation*.

This publication is a support document. The advice and direction offered is suggestive except where it duplicates the Program of Studies. The Program of Studies—a prescriptive description of the expectations of student learning, focusing on what students are expected to know and be able to do—is issued under the authority of the Minister of Education pursuant to section 25(1) of the *School Act*, Statutes of Alberta, 1988, Chapter S-3.1 as amended, and is required for implementation. **Within this document, the Program of Studies is shaded so that the reader may readily identify all prescriptive statements or segments.**

Every effort has been made to acknowledge original sources and comply with copyright regulations. Please notify Alberta Education if there are cases where this has not been done.

Questions or comments about this Guide to Standards and Implementation are welcome and should be directed to:

Career and Technology Studies Unit, Curriculum Standards Branch, Alberta Education, Devonian Building,
11160 Jasper Avenue, Edmonton, Alberta, T5K 0L2.
Telephone: (403) 422-4872, Fax: (403) 422-0576
Outside of Edmonton dial 310-0000 to be connected toll free.

TABLE OF CONTENTS

Page

Career and Technology Studies

Program Rationale and Philosophy A.1
General Learner Expectations A.3
Program Organization A.3
    Curriculum Structure A.3
    Levels of Achievement A.4
Curriculum and Assessment Standards A.5
Types of Competencies A.5
    Basic Competencies Reference Guide A.6

Information Processing

Strand Rationale and Philosophy B.1
Strand Organization B.3
    Themes B.4
    Integrating Concepts B.4
    Learning Contexts B.4
    Scope and Sequence B.5
    Module Descriptions B.6

Planning for Instruction
    Planning for CTS C.1
    Planning for Information Processing C.3

Module Curriculum and Assessment Standards: Introductory Level D.1

Module Curriculum and Assessment Standards: Intermediate Level E.1

Module Curriculum and Assessment Standards: Advanced Level F.1

Assessment Tools G.1

Linkages/Transitions H.1

Learning Resource Guide I.1

Sample Student Learning Guides J.1

Acknowledgements K.1

CAREER AND TECHNOLOGY STUDIES

A. PROGRAM RATIONALE AND PHILOSOPHY

Through Career and Technology Studies (CTS), secondary education in Alberta is responding to the many challenges of modern society, helping young people develop daily living skills and nurturing a flexible, well-qualified work force.

In Canada's information society, characterized by rapid change in the social and economic environment, students must be confident in their ability to respond to change and successfully meet the challenges they face in their own personal and work lives. In particular, they make decisions about what they will do when they finish high school. Many students will enter the work force, others will continue their education. All students face the challenges of growing independence and responsibility, and of entering post-secondary programs and/or the highly competitive workplace.

Secondary schools also face challenges. They must deliver, on a consistent basis, high quality, cost-effective programs that students, parents and the community find credible and relevant.

CTS helps schools and students meet these challenges. Schools can respond more efficiently and effectively to student and community needs and expectations by taking advantage of the opportunities in the CTS curriculum to design courses and access school, community and distance learning resources. Students can develop the confidence they need as they move into adult roles by assuming increased responsibility for their learning; cultivating their individual talents, interests and abilities; and by defining and acting on their goals.

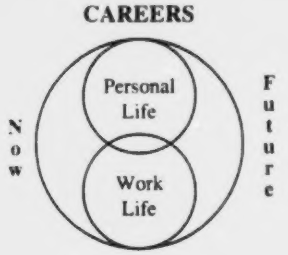
As an important component of education in Alberta secondary schools, CTS promotes student achievement by setting clear expectations and recognizing student success. Students in CTS develop competencies—the knowledge, skills and attitudes they are expected to demonstrate, that is, what they know and what they are able to do.

Acquired competencies can be applied now and in the future as students make a smooth transition into adult roles in the family, community, workplace and/or further education. To facilitate this transition, clearly stated expectations and standards have been defined in cooperation with teachers, business and industry representatives and post-secondary educators.

CTS offers all students important learning opportunities. Regardless of the particular area of study chosen, ***students*** in CTS ***will***:

- develop skills that can be applied in their daily lives, now and in the future
- refine career-planning skills
- develop technology-related skills
- enhance employability skills
- apply and reinforce learnings developed in other subject areas.

In CTS, students build skills they can apply in their everyday lives. For example, in the CTS program, particularly at the introductory levels, students have the opportunity to improve their ability to make sound consumer decisions and to appreciate environmental and safety precautions.

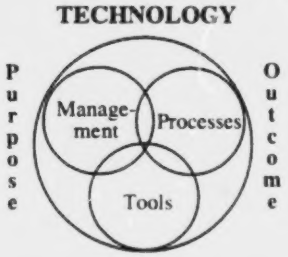


A career encompasses more than activities just related to a person's job or occupation; it involves one's personal life in both local and global contexts; e.g., as a family member, a friend, a community volunteer, a citizen of the world.

The integration of careers throughout the CTS program helps students to make effective career decisions and to target their efforts. CTS students will have the opportunity to expand their knowledge about careers, occupations and job opportunities, as well as the education and/or training requirements involved. Also, students come to recognize the need for lifelong learning.

Students in CTS have the opportunity to use and apply technology and systems effectively and efficiently. This involves:

- a decision regarding which processes and procedures best suit the task at hand
- the appropriate selection and skilled use of the tools and/or resources available
- an assessment of and management of the impact the use of the technology may have on themselves, on others and on the environment.



Integrated throughout CTS are employability skills, those basic competencies that help students develop their personal management and social skills. Personal management skills are improved as students take increased responsibility for their learning, design innovative solutions to problems and challenges, and manage resources effectively and efficiently. Social skills improve through learning experiences that require students to work effectively with others, demonstrate teamwork and leadership, and maintain high standards in safety and accountability.

As well as honing employability skills, CTS reinforces and enhances learnings developed in core and other complementary courses. The curriculum emphasizes, as appropriate, the effective application of communication and numeracy skills.

In addition to the common outcomes described above, students focusing on a particular area of study will develop career-specific competencies that support entry into the workplace and/or related post-secondary programs. Career-specific competencies can involve understanding and applying appropriate terminology, processes and technologies related to a specific career, occupation or job.

GENERAL LEARNER EXPECTATIONS

General learner expectations describe the basic competencies integrated throughout the CTS program.

Within an applied context relevant to personal goals, aptitudes and abilities; *the student* in CTS *will*:

- demonstrate the basic knowledge, skills and attitudes necessary for achievement and fulfillment in personal life
- develop an action plan that relates personal interests, abilities and aptitudes to career opportunities and requirements
- use technology effectively to link and apply appropriate tools, management and processes to produce a desired outcome
- develop basic competencies (employability skills), by:
  - selecting relevant, goal-related activities, ranking them in order of importance, allocating necessary time, and preparing and following schedules (managing learning)
  - linking theory and practice, using resources, tools, technology and processes responsibly and efficiently (managing resources)
  - applying effective and innovative decision-making and problem-solving strategies in the design, production, marketing and consumption of goods and services (problem solving and innovation)
  - demonstrating appropriate written and verbal skills, such as composition, summarization and presentation (communicating effectively)
  - participating as a team member by working cooperatively with others and contributing to the group with ideas, suggestions and effort (working with others)
  - maintaining high standards of ethics, diligence, attendance and punctuality, following safe procedures consistently, and recognizing and eliminating potential hazards (demonstrating responsibility).

PROGRAM ORGANIZATION

CURRICULUM STRUCTURE

Career and Technology Studies is organized into **strands** and **modules**.

Strands in CTS define competencies that help students:

- build daily living skills
- investigate career options
- use technology (managing, processes, tools) effectively and efficiently
- prepare for entry into the workplace and/or related post-secondary programs.

In general, strands relate to selected industry sectors offering positive occupational opportunities for students. Some occupational opportunities require further education after high school, and some allow direct entry into the workplace. Industry sectors encompass goods-producing industries, such as agriculture, manufacturing and construction; and service-producing industries, such as business, health, finance and insurance.

Modules are the building blocks for each strand. They define what a student is expected to know and be able to do (exit-level *competencies*). Modules also specify prerequisites. Recommendations for module parameters, such as instructional qualifications, facilities and equipment can be found in the guides to implementation.

The competencies a student must demonstrate to achieve success in a module are defined through the *module learner expectations*. Senior high school students who can demonstrate the module learner expectations; i.e., who have the designated competencies, will qualify for one credit toward their high school diploma.

Specific learner expectations provide a more detailed framework for instruction. Within the context of module learner expectations, the specific learner expectations further define the knowledge, skills and attitudes the student should acquire.

The following chart shows the 22 strands that comprise the CTS program and the number of modules available in each strand.

Strand	No. of Modules
1. Agriculture	33
2. Career Transitions	28
3. Communication Technology	33
4. Community Health	31
5. Construction Technologies	46
6. Cosmetology	58
7. Design Studies	31
8. Electro-Technologies	37
9. Energy and Mines	26
10. Enterprise and Innovation	8
11. Fabrication Studies	41
12. Fashion Studies	29
13. Financial Management	14
14. Foods	37
15. Forestry	21
16. Information Processing	48
17. Legal Studies	13
18. Logistics	12
19. Management and Marketing	19
20. Mechanics	54
21. Tourism Studies	24
22. Wildlife	17

LEVELS OF ACHIEVEMENT

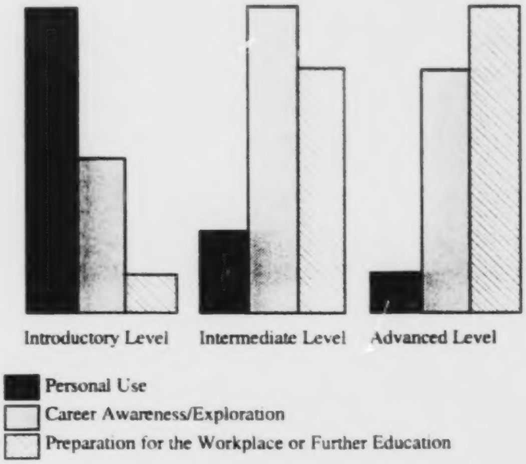
Modules are organized into three levels of achievement: **introductory**, **intermediate** and **advanced**. As students progress through the levels, they will be expected to meet higher standards and demonstrate an increased degree of competence, in both the general learner expectations and the module learner expectations.

Introductory level modules help students build daily living skills and form the basis for further learning. Introductory modules are for students who have no previous experience in the strand.

Intermediate level modules build on the competencies developed at the introductory level. They provide a broader perspective, helping students recognize the wide range of related career opportunities available within the strand.

Advanced level modules refine expertise and help prepare students for entry into the workplace or a related post-secondary program.

The graph below illustrates the relative emphasis on the aspects of career planning at each of the levels.



CURRICULUM AND ASSESSMENT STANDARDS

Curriculum standards in CTS define what students must know and be able to do. Curriculum standards are expressed through general learner expectations for CTS, and through module and specific learner expectations for each strand.

Assessment standards define how student performance is to be judged. In CTS, each assessment standard defines the conditions and criteria to be used for assessing the competencies of each module learner expectation. To receive credit for a module, students must demonstrate competency at the level specified by the conditions and criteria defined for each module learner expectation.

Students throughout the province receive a fair and reliable assessment as they use the standards to guide their efforts, thus ensuring they participate more effectively and successfully in the learning and assessment process. Standards at advanced levels are, as much as possible, linked to workplace and post-secondary entry-level requirements.

TYPES OF COMPETENCIES

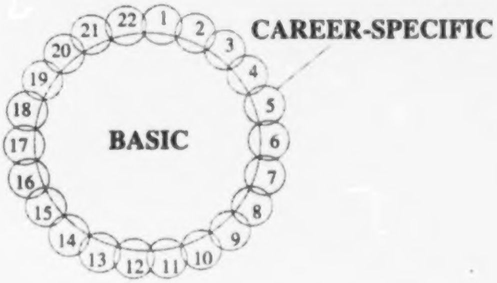
Two types of competencies are defined within the CTS program: basic and career-specific.

Basic competencies are generic to any career area and are developed within each module. Basic competencies include:

- personal management; e.g., managing learning, being innovative, ethics, managing resources
- social; e.g., communication, teamwork, leadership and service, demonstrating responsibility (safety and accountability).

Career-specific competencies relate to a particular strand. These competencies build daily living skills at the introductory levels and support the smooth transition to the workplace and/or post-secondary programs at the intermediate and advanced levels.

The model below shows the relationship of the two types of competencies within the 22 strands of the CTS program.



BASIC COMPETENCIES REFERENCE GUIDE

The chart below outlines basic competencies that students endeavour to develop and enhance in each of the CTS strands and modules. Students' basic competencies should be assessed through observations involving the student, teacher(s), peers and others as they complete the requirements for each module. In general, there is a progression of task complexity and student initiative as outlined in the Developmental Framework*. **As students progress through Stages 1, 2, 3 and 4 of this reference guide, they build on the competencies gained in earlier stages**. Students leaving high school should set themselves a goal of being able to demonstrate Stage 3 performance.

Suggested strategies for classroom use include:

- having students rate themselves and each other
- using in reflective conversation between teacher and student
- highlighting areas of strength
- tracking growth in various CTS strands
- highlighting areas upon which to focus
- maintaining a student portfolio.

Stage 1— *The student:*	**Stage 2**— *The student:*	**Stage 3**— *The student:*	**Stage 4**— *The student:*
Managing Learning			
☐ comes to class prepared for learning	☐ →	☐ →	☐ →
☐ follows basic instructions, as directed	☐ follows instructions, with limited direction ☐ sets goals and establishes steps to achieve them, with direction	☐ follows detailed instructions on an independent basis ☐ sets clear goals and establishes steps to achieve them	☐ → ☐ demonstrates self-direction in learning, goal setting and goal achievement
☐ acquires specialized knowledge, skills and attitudes	☐ applies specialized knowledge, skills and attitudes in practical situations	☐ transfers and applies specialized knowledge, skills and attitudes in a variety of situations	☐ transfers and applies learning in new situations; demonstrates commitment to lifelong learning
☐ identifies criteria for evaluating choices and making decisions	☐ identifies and applies a range of effective strategies for solving problems and making decisions	☐ uses a range of critical thinking skills to evaluate situations, solve problems and make decisions	☐ thinks critically and acts logically to evaluate situations, solve problems and make decisions
☐ uses a variety of learning strategies	☐ explores and uses a variety of learning strategies, with limited direction	☐ selects and uses effective learning strategies ☐ cooperates with others in the effective use of learning strategies	☐ → ☐ provides leadership in the effective use of learning strategies
Managing Resources			
☐ adheres to established timelines; uses time/schedules/planners effectively	☐ creates and adheres to timelines, with limited direction; uses time/schedules/planners effectively	☐ creates and adheres to detailed timelines on an independent basis; prioritizes task; uses time/schedules/planners effectively	☐ creates and adheres to detailed timelines; uses time/schedules/planners effectively; prioritizes tasks on a consistent basis
☐ uses information (material and human resources), as directed	☐ accesses and uses a range of relevant information (material and human resources), with limited direction	☐ accesses a range of information (material and human resources), and recognizes when additional resources are required	☐ uses a wide range of information (material and human resources) in order to support and enhance the basic requirement
☐ uses technology (facilities, equipment, supplies), as directed, to perform a task or provide a service	☐ uses technology (facilities, equipment, supplies), as appropriate, to perform a task or provide a service, with minimal assistance and supervision	☐ selects and uses appropriate technology (facilities, equipment, supplies) to perform a task or provide a service on an independent basis	☐ recognizes the monetary and intrinsic value of managing technology (facilities, equipment, supplies)
☐ maintains, stores and/or disposes of equipment and materials, as directed	☐ maintains, stores and/or disposes of equipment and materials, with limited assistance	☐ maintains, stores and/or disposes of equipment and materials on an independent basis	☐ demonstrates effective techniques for managing facilities, equipment and supplies
Problem Solving and Innovation			
☐ participates in problem solving as a process ☐ learns a range of problem-solving skills and approaches	☐ identifies the problem and selects an appropriate problem-solving approach, responding appropriately to specified goals and constraints	☐ thinks critically and acts logically in the context of problem solving	☐ identifies and resolves problems efficiently and effectively
☐ practices problem-solving skills by responding appropriately to a clearly defined problem, specified goals and constraints, by: – generating alternatives – evaluating alternatives – selecting appropriate alternative(s) – taking action	☐ applies problem-solving skills to a directed or a self-directed activity, by: – generating alternatives – evaluating alternatives – selecting appropriate alternative(s) – taking action	☐ transfers problem-solving skills to real-life situations, by generating new possibilities ☐ prepares implementation plans ☐ recognizes risks	☐ identifies and suggests new ideas to get the job done creatively, by: – combining ideas or information in new ways – making connections among seemingly unrelated ideas – seeking out opportunities in an active manner

Stage 1— *The student:*	**Stage 2**— *The student:*	**Stage 3**— *The student:*	**Stage 4**— *The student:*
Communicating Effectively			
☐ uses communication skills; e.g., reading, writing, illustrating, speaking	☐ communicates thoughts, feelings and ideas to justify or challenge a position, using written, oral and/or visual means	☐ prepares and effectively presents accurate, concise, written, visual and/or oral reports providing reasoned arguments	☐ negotiates effectively, by working toward an agreement that may involve exchanging specific resources or resolving divergent interests
☐ uses language in appropriate context	☐ uses technical language appropriately	☐ encourages, persuades, convinces or otherwise motivates individuals	☐ negotiates and works toward a consensus
☐ listens to understand and learn	☐ listens and responds to understand and learn	☐ listens and responds to understand, learn and teach	☐ listens and responds to understand, learn, teach and evaluate
☐ demonstrates positive interpersonal skills in selected contexts	☐ demonstrates positive interpersonal skills in many contexts	☐ demonstrates positive interpersonal skills in most contexts	☐ promotes positive interpersonal skills among others
Working with Others			
☐ fulfills responsibility in a group project	☐ →→	☐ seeks a team approach, as appropriate, based on group needs and benefits; e.g., idea potential, variety of strengths, sharing of workload	☐ leads, where appropriate, mobilizing the group for high performance
☐ works collaboratively in structured situations with peer members	☐ cooperates to achieve group results	☐ works in a team or group: – encourages and supports team members – helps others in a positive manner – provides leadership/followership as required – negotiates and works toward consensus as required	☐ understands and works within the context of the group
☐ acknowledges the opinions and contributions of others in the group	☐ maintains a balance between speaking, listening and responding in group discussions ☐ respects the feelings and views of others		☐ prepares, validates and implements plans that reveal new possibilities
Demonstrating Responsibility			
Attendance			
☐ demonstrates responsibility in attendance, punctuality and task completion	☐ →→	☐ →→	☐ →→
Safety			
☐ follows personal and environmental health and safety procedures	☐ recognizes and follows personal and environmental health and safety procedures	☐ establishes and follows personal and environmental health and safety procedures	☐ transfers and applies personal and environmental health and safety procedures to a variety of environments and situations
☐ identifies immediate hazards and their impact on self, others and the environment	☐ identifies immediate and potential hazards and their impact on self, others and the environment	☐ →→	☐ →→
☐ follows appropriate/emergency response procedures	☐ →→	☐ →→	☐ →→
			☐ demonstrates accountability for actions taken to address immediate and potential hazards
Ethics			
☐ makes personal judgements about whether or not certain behaviours/actions are right or wrong	☐ assesses how personal judgements affect other peer members and/or family; e.g., home and school	☐ assesses the implications of personal/group actions within the broader community; e.g., workplace	☐ analyzes the implications of personal/group actions within the global context ☐ states and defends a personal code of ethics as required

*** Developmental Framework**			
• *Simple task* • *Structured environment* • *Directed learning*	• *Task with limited variables* • *Less structured environment* • *Limited direction*	• *Task with multiple variables* • *Flexible environment* • *Self-directed learning, seeking assistance as required*	• *Complex task* • *Open environment* • *Self-directed/self-motivated*

INFORMATION PROCESSING

B. STRAND RATIONALE AND PHILOSOPHY

Information Processing, a strand in Career and Technology Studies, represents the study of electronic technologies as they apply to personal use and the business environment.

As we move more rapidly into the information age, it is crucial that students are able to use electronic technologies to access and manipulate information in an efficient manner. Accurate, timely information is the basis for sound decision making and effective communication.

As students build confidence in their understanding of the various information processing tools and procedures, they will be able to transfer their knowledge and skill to a wide range of contexts. They will also be better able to adapt to the continual changes caused by the evolving technologies.

To understand the shift from the *industrial society* toward the *information age*, it is important that a student understands the significance of the current technological development, of how technology affects an individual's daily life and of the impact that technology has on the world of work. Within this perspective, Information Processing provides for the development of:

- a meaningful study of technological trends
- an understanding of the systems that relate in whole or in part to the management of information
- an understanding of the ethical and societal issues concerning technological development and its impact on society
- technological skills and knowledge designed for personal use
- technological skills and knowledge that transfer to other curriculum areas
- technological skills and knowledge required for the world of work.

Students will learn to input, process and output information in the following areas:

- systems operations
- text/data input
- productivity software
- applied processing
- dynamic environment
- programming (procedure-oriented and object-oriented).

STRAND ORGANIZATION

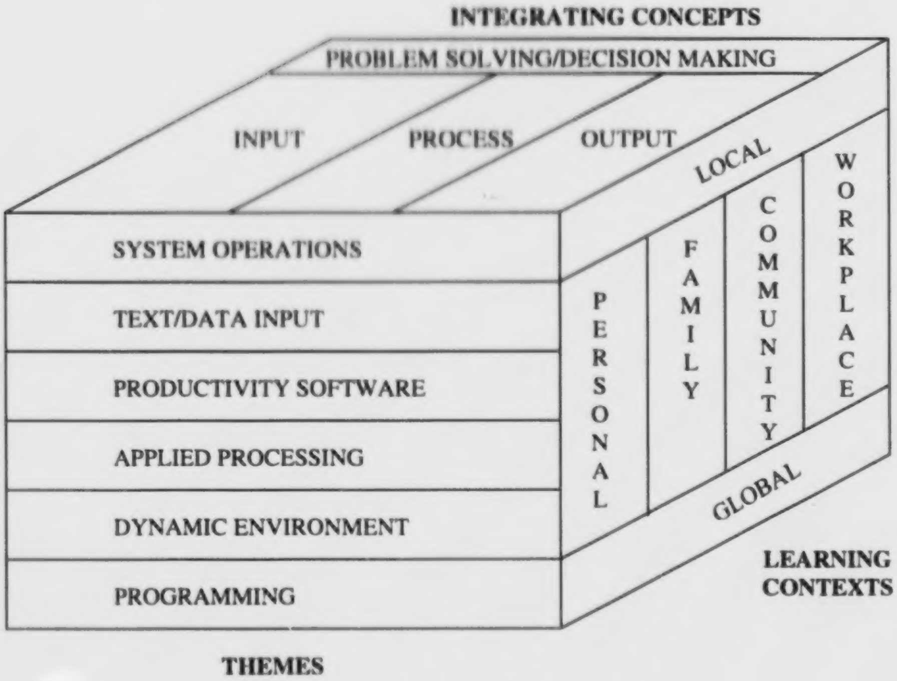
The developmental model indicates the relationship of what the students learn (as described in the themes), how these learnings are emphasized within the modules (as described in the integrating concepts) and how students will apply these learnings (as described in the learning contexts).

LEVELS

Students working on modules at the introductory level develop basic techniques and skills which, while primarily for personal use, also form the foundation for the development of more professional applications.

In the intermediate level modules, students are expected to work more independently and expand and refine basic skills in a wide range of applications.

At the advanced level, students use initiative to efficiently integrate applications and processes to produce high quality work to workplace standards.


INTEGRATING CONCEPTS
PROBLEM SOLVING/DECISION MAKING
INPUT
PROCESS
OUTPUT
LOCAL
SYSTEM OPERATIONS
TEXT/DATA INPUT
PRODUCTIVITY SOFTWARE
APPLIED PROCESSING
DYNAMIC ENVIRONMENT
PROGRAMMING
PERSONAL
FAMILY
COMMUNITY
WORKPLACE
GLOBAL
LEARNING CONTEXTS
THEMES

THEMES

The themes provide learning experiences that link knowledge, skills and attitudes with real-life situations. Modules are organized into six themes:

- system operations
- text/data input
- productivity software
- applied processing
- dynamic environment
- programming.

The modules in the System Operations theme help students efficiently use and assess computer hardware and related software and peripherals, and understand and apply various communication protocols.

In the Text/Data Input themes students develop efficient keyboarding competencies for both personal use and professional skill levels.

In Productivity Software modules students learn the commands and processes of the key productivity software packages used in personal and professional applications, including word processing, spreadsheet, database, graphics and electronic/desktop publishing. Students expand their ability use these software applications in other CTS strands such as Communication Technology, or in other courses such as English, mathematics, etc.

The Applied Processing theme is designed to increase students' level of productivity as they produce a variety of documents that integrate text, data and graphics applications.

In the Dynamic Environments theme students work with software that links various media and processes in new and unique ways to manage and communicate information.

The Programming theme provides an opportunity for students to develop high-level, structured programming skills, using either procedure-oriented or object-oriented processes.

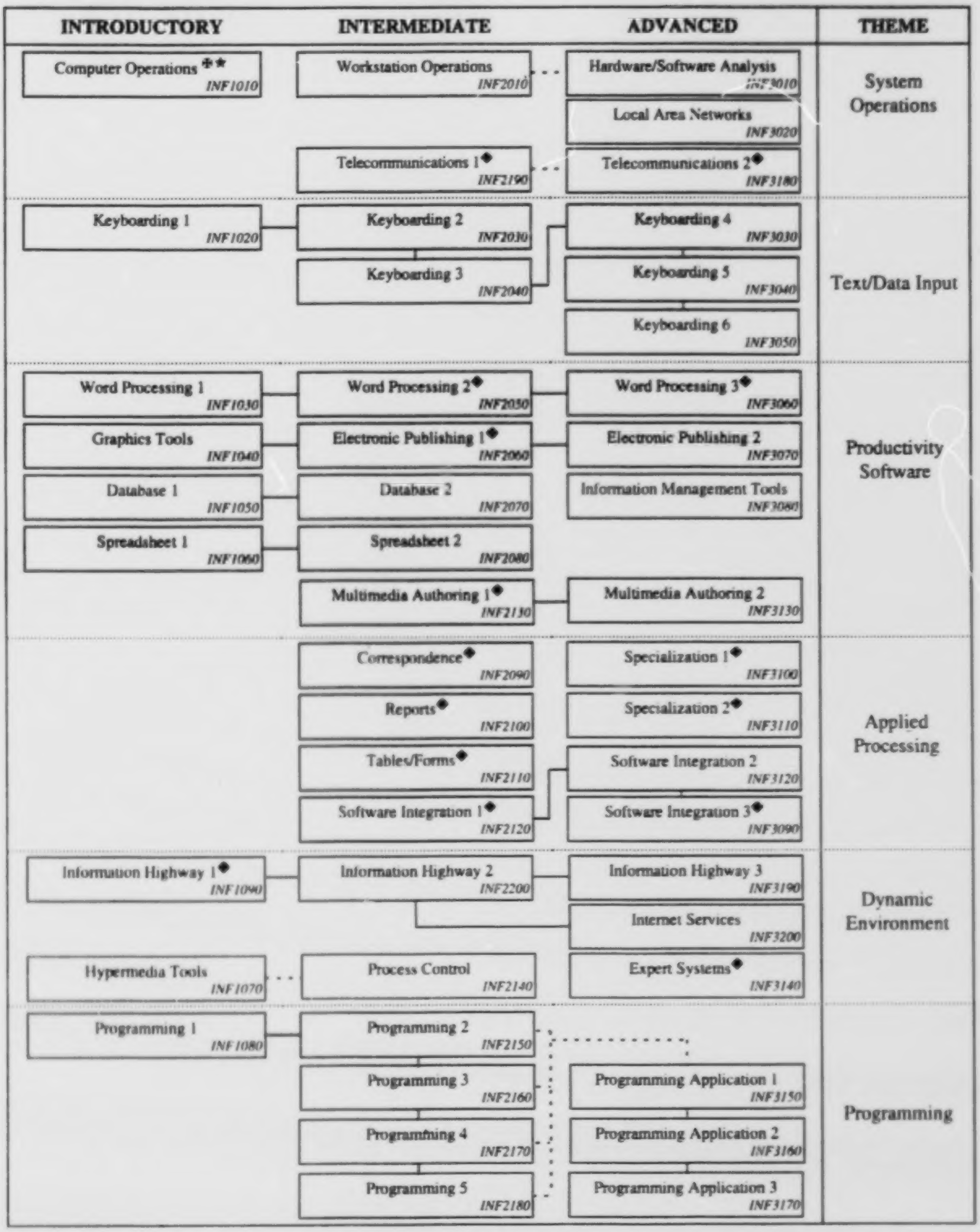
INTEGRATING CONCEPTS

Integrated within each of the Information Processing modules is the expectation that students will identify and resolve problems efficiently by using effective decision-making skills. Students apply these problem-solving/decision-making skills as they determine the most effective and efficient processes to use to input, process and output information.

LEARNING CONTEXTS

Learning contexts help students relate their learning to real-life experiences and challenges. In modules at the introductory level, these challenges are most frequently in a context typical in daily living—within the home, school or community. As the student progresses through the intermediate and advanced levels, the challenges and related expectations for performance involve contexts that relate to the workplace.

With the ever-increasing power of information technologies, all of these applications can be applied both at the local and global level. The competencies students develop in Information Processing will also support students as they continue their education in post-secondary or other further education opportunities.



INTRODUCTORY	INTERMEDIATE	ADVANCED	THEME
Computer Operations ✚★ INF1010	Workstation Operations INF2010	Hardware/Software Analysis INF3010	System Operations
		Local Area Networks INF3020	
	Telecommunications 1◆ INF2190	Telecommunications 2◆ INF3180	
Keyboarding 1 INF1020	Keyboarding 2 INF2030	Keyboarding 4 INF3030	Text/Data Input
	Keyboarding 3 INF2040	Keyboarding 5 INF3040	
		Keyboarding 6 INF3050	
Word Processing 1 INF1030	Word Processing 2◆ INF2050	Word Processing 3◆ INF3060	Productivity Software
Graphics Tools INF1040	Electronic Publishing 1◆ INF2060	Electronic Publishing 2 INF3070	
Database 1 INF1050	Database 2 INF2070	Information Management Tools INF3080	
Spreadsheet 1 INF1060	Spreadsheet 2 INF2080		
	Multimedia Authoring 1◆ INF2130	Multimedia Authoring 2 INF3130	
	Correspondence◆ INF2090	Specialization 1◆ INF3100	Applied Processing
	Reports◆ INF2100	Specialization 2◆ INF3110	
	Tables/Forms◆ INF2110	Software Integration 2 INF3120	
	Software Integration 1◆ INF2120	Software Integration 3◆ INF3090	
Information Highway 1◆ INF1090	Information Highway 2 INF2200	Information Highway 3 INF3190	Dynamic Environment
		Internet Services INF3200	
Hypermedia Tools INF1070	Process Control INF2140	Expert Systems◆ INF3140	
Programming 1 INF1080	Programming 2 INF2150		Programming
	Programming 3 INF2160	Programming Application 1 INF3150	
	Programming 4 INF2170	Programming Application 2 INF3160	
	Programming 5 INF2180	Programming Application 3 INF3170	

——— Prerequisite . . . . Recommended sequence

✚ Prerequisite to all modules in this strand. ★ Module provides a strong foundation for further learning in this strand.

◆ Refer to specific modules for additional prerequisites.

MODULE DESCRIPTIONS

Module INF1010: Computer Operations
Students develop personal use skills basic to all modules in the Information Processing strand in the following applications: file management, basic hardware and software operations, text entry and workstation routines.

Module INF1020: Keyboarding 1
Students develop accurate touch keystroking of text and data appropriate to personal use and the application of efficient workstation procedures.

Module INF1030: Word Processing 1
Students develop skill in using basic commands and functions in word processing software, including document editing, and the formatting and printing of reports, correspondence and tables suitable for personal use applications.

Module INF1040: Graphics Tools
Students learn the basic commands and functions of computer graphics software, including bitmapped graphics (paint program) and vector graphics (draw program). Students also develop basic skills in manipulating existing graphics, as well as in producing their own graphics.

Module INF1050: Database 1
Students are introduced to the basic commands and functions of database software, and demonstrate how this software can be used as a personal tool in data and information management.

Module INF1060: Spreadsheet 1
Students have an opportunity to use basic functions and commands in spreadsheet software for general data manipulation and personal record keeping.

Module INF1070: Hypermedia Tools
Students develop basic skills with tools used for computerized presentations involving text, data, graphics, sound and animation.

Module INF1080: Programming 1
Students are introduced to computer programming languages and a structured programming environment, and they construct algorithms and code instructions to solve identified problems.

Module INF1090: Information Highway 1
Students develop personal use Internet skills for accessing and communicating data and information, with particular emphasis on the world wide web and e-mail.

Module INF2010: Workstation Operations
Students learn computer workstation operations, including computer architecture, peripherals, configurations, operating system environments and platforms, utility software, diagnostic and protection software, hard drive file updating and maintenance, support resource application and troubleshooting activities.

Module INF2030: Keyboarding 2
Students enhance their personal use keyboarding competencies by increasing the rate of accurate touch keystroking of the alphabetic, numeric and selected punctuation keys.

Module INF2040: Keyboarding 3
Students enhance their keyboarding competencies, by increasing the rate of accurate touch keystroking of alphabetic, numeric and all punctuation keys to support personal use and limited, entry-level, workplace opportunities.

Module INF2050: Word Processing 2
Students expand their skills in using word processing software commands and functions to produce mailable reports and correspondence, including letters, memorandums and tables, all from rough draft copy.

Module INF2060: Electronic Publishing 1
Students develop skill, using electronic/desktop publishing software to create a variety of camera-ready documents.

Module INF2070: Database 2
Students use all the commands and functions of electronic database software that support effective and efficient database applications.

Module INF2080: Spreadsheet 2
Students demonstrate advanced level spreadsheet commands and functions to calculate and manipulate data and to prepare appropriate reports and printouts in text and graphic format.

Module INF2090: Correspondence
Students expand their rate of document production as they prepare various forms of correspondence in mailable form, using word processing software.

Module INF2100: Reports
Students expand their rate of production as they prepare various reports and manuscripts in mailable form.

Module INF2110: Tables/Forms
Students expand their rate of document production as they prepare various tables/forms in mailable form.

Module INF2120: Software Integration 1
Students develop document production skills requiring the integration of data, text and graphics.

Module INF2130: Multimedia Authoring 1
Students are introduced to multimedia software and provided with an opportunity to develop basic authoring competence, by accessing and integrating software resident text, video and audio clips.

Module INF2140: Process Control
Students develop skills in robotics/simulation software control by creating, modifying and using programs that incorporate computer-controlled movements and events in robotics/simulation activities and applications.

Module INF2150: Programming 2
Students increase their programming skills, by designing and generating programming code to handle decision making and repetitive processes.

Module INF2160: Programming 3
Students increase their programming skills, by using subprogram structures.

Module INF2170: Programming 4
Students increase their programming skills, by developing and using derived data types.

Module INF2180: Programming 5
Students increase their programming skills, by developing and using recursive, sorting and merging algorithms.

Module INF2190 Telecommunications 1
Students learn how to select and use various wired and wireless telecommunication systems. By using the Internet, they investigate how communication principles, bandwidth, telecommunication infrastructure and wave spectrum affects telecommunication systems.

Module INF2200: Information Highway 2
Students learn how to produce a web page for the Internet.

Module INF3010: Hardware/Software Analysis
Students analyze, compare and evaluate hardware/ software based on user requirements.

Module INF3020: Local Area Networks
Students learn about local area network (LAN) computer systems, including hardware and peripheral configurations, interface protocols and data transmission characteristics.

Module INF3030: Keyboarding 4
Students develop their text and data keyboarding skills to entry-level occupational expectations.

Module INF3040: Keyboarding 5
Students increase their occupational-level keyboarding competence of text, data and function/service keys, using straight copy and edited material.

Module INF3050: Keyboarding 6
Students enhance their occupational-level keyboarding competence of all keystroke functions, using unedited, edited and straight copy material.

Module INF3060: Word Processing 3
Students develop occupational-level competence in the use of word processing software commands and functions to produce mailable reports, correspondence and tables, including the importing and merging of text, data and graphics.

Module INF3070: Electronic Publishing 2
Students use the functions and commands of electronic/desktop publishing software as they integrate text composing, editing, typesetting, graphics generation and page layout functions to create customized, professional, quality documents.

Module INF3080: Information Management Tools
Students develop competence in using information management systems software, such as project management, schedules and planners for either personal or workplace applications.

Module INF3090: Software Integration 3
Students develop high production rates as they process documents from unedited and unformatted copy, using numerous functions/commands to create, revise, format and print a wide range of mailable copy.

Module INF3100: Specialization 1
Students specialize in document preparation, terminology application and associated office routine expectations in a specific focus area, such as a medical, legal, petroleum, real estate, insurance, travel/tourism, forestry or agricultural environment.

Module INF3110: Specialization 2
Students develop workplace competence in a specific focus area, such as medical, legal, petroleum, real estate, insurance, travel/tourism, forestry or agricultural environment, by creating and completing appropriate documents that employ specialized communication skills and conform to workplace expectations and time constraints.

Module INF3120: Software Integration 2
Students expand their document production skills to workplace standards. Documents could require the importing and integration of word processing, spreadsheet, graphics and database files.

Module INF3130: Multimedia Authoring 2
Students learn to use a multimedia file or multimedia authoring software based on digitized input of text, video and audio clips.

Module INF3140: Expert Systems
Students acquire knowledge of expert systems, such as artificial intelligence and virtual reality. They gain competence, by developing or modifying programs that incorporate computer-controlled environments and multimedia interactive activities and applications.

Module INF3150: Programming Application 1
Students create programs that use external files.

Module INF3160: Programming Application 2
Students create a program, using a second programming language.

Module INF3170: Programming Application 3
Students enhance a program, using a second programming language.

Module INF3180 Telecommunications 2
Students demonstrate knowledge of telecommunications systems by designing a new system. They use the Internet in researching and developing their design and for comparing and contrasting various telecommunications initiatives. Students analyze the effect this is having on the individual and society.

Module INF3190 Information Highway 3
Students develop and maintain an Internet/intranet web site that makes use of advanced features.

Module INF3200 Internet Services
Students expand their skills from Information Highway 2, by learning how to operate, maintain and build an Internet/intranet site that may include computer bulletin boards, forums, electronic mail, Internet list servers, and/or moderated newsgroups. Proper use of hardware, software and liaison with users and clients is emphasized.

SECTION C: PLANNING FOR INSTRUCTION

CTS provides increased opportunity for junior and senior high schools to design courses based on the needs and interests of their students and the circumstances within the school and community. Some strands may be appropriately introduced at the junior high school level. Other strands are more appropriately introduced at the senior high school level or to Grade 9 students. Refer to this section for recommendations regarding the Legal Studies strand, or the *Career & Technology Studies Manual for Administrators, Counsellors and Teachers* for a summary of the recommended grade levels for each strand.

PLANNING FOR CTS

Defining Courses

Schools determine which strands and modules will be offered in a particular school, and will combine modules into courses.

Each module was designed for approximately 25 hours of instruction. However, this time frame is only a guideline to facilitate planning. The CTS curricula are competency based, and the student may take more or less time to gain the designated competencies within each module.

A course will usually consist of modules primarily from the same strand but, where appropriate, may include modules from other CTS strands. Refer to the *Career & Technology Studies Manual for Administrators, Counsellors and Teachers* (Appendix 4) for more information on course names and course codes.

Module selection and sequencing should consider:

- prerequisite(s)
- supporting module(s) (other CTS modules that may enhance the learning opportunity if offered with the module)
- module parameters
  - instructional qualifications, if specialized
  - equipment and facility requirements, if specialized.

The module parameters are defined for each module in Sections D, E and F of this Guide.

Degree of Flexibility

The CTS program, while designed using the modular structure to facilitate flexible timetabling and instructional delivery, does not mandate the degree of flexibility a school or teacher will offer. The teacher and school will determine the degree of flexibility available to the student. Within the instructional plan established by the school, the student may:

- be given the opportunity to progress at a rate that is personally challenging
- have increased opportunity to select modules that develop competencies he or she finds most relevant.

Integrating Basic Competencies

The basic competencies relate to managing learning and resources, problem solving and innovation, communicating effectively, working with others and demonstrating responsibility are developed throughout the CTS program, and are within each module.

Assessment of student achievement on the basic competencies is integrated throughout the other module learner expectations. Refer to Section G (Assessment Tools) of this Guide for the description of student behaviours expected at each of the four developmental stages defined for the basic competencies.

Assessment of basic competencies could include input and reflection involving the student, teacher(s), peers and others. Description of the observed behaviour could be provided through a competency profile for the module. Positive, ongoing interaction between the student and teacher will support motivation for student growth and improvement.

Assessing Student Achievement

Assessing student achievement is a process of gathering information by way of observations of process, product and student interaction.

Where appropriate, assessment tools have been defined to assist the teacher and student in the assessment. Refer to Section G (Assessment Tools) of this Guide for copies of the various tools (worksheets, checklists, sample questions, etc.).

A suggested emphasis for each module learner expectation has also been established. The suggested emphasis provides a guideline to help teachers determine time allocation and/or the appropriate emphasis for each MLE and student grade.

Recognizing Student Achievement

At the high school level, successful demonstration of the exit-level competencies in a module qualifies the student for one credit. Refer to Section A of this Guide for more detailed information about how curriculum and assessment standards are defined in CTS. Refer to the *Career & Technology Studies Manual for Administrators, Counsellors and Teachers* (Appendix 12) for more information on how student achievement can be recognized and reported at the school and provincial levels.

Portfolios

When planning for instruction and assessment, consider a portfolio as an excellent tool to provide evidence of a student's effort, progress and achievement. Portfolios will aid students in identifying skills and interest. They also provide the receiving teacher, employer and/or post-secondary institution proof of a student's accomplishments. The make-up and evaluation of the portfolio should be a collaborative agreement between the student and teacher.

Resources

A comprehensive resource base, including print, software and audio-visual, has been identified to support CTS strands. It is intended that these resources form the basis of a resource centre, encouraging teachers and students to access a wide selection of resources and other information sources throughout the learning process. Unless otherwise noted, these resources are considered to be suitable for both junior and senior high school students.

Authorized resources may be obtained from the Learning Resources Distributing Centre or directly from the publisher or distributor. Refer to Section I (Learning Resource Guide) of this Guide for the complete resource list including curriculum correlations and resource annotations. Additional sources refer to noncommercial or government agencies that offer resources that may be of assistance in this strand.

Sample Student Learning Guides

In addition to the resources, Sample Student Learning Guides are available (refer to Section J of this Guide). These samples, designed for individual student or small group use, provide an instructional plan for selected modules and include the following components:

- Why take this module?
- What are the entry-level competencies?
- What are the exit-level competencies?
- What resources may be accessed?
- What assignments/activities must be completed?
- What are the timelines?
- How will the final mark be calculated?

Sample Student Learning Guides have been developed for the following modules in Information Processing:

- INF1020 Keyboarding 1
- INF1030 Word Processing 1.

PLANNING FOR INFORMATION PROCESSING

The following suggestions are provided to assist teachers, schools and school system administrators as they plan to deliver modules from the Information Processing strand.

Selecting Modules

The scope and sequence chart in Section B provides an overview of the Information Processing modules, indicating prerequisites and theme areas. Brief descriptions of the modules follow the scope and sequence chart in Section B.

Information Processing in Junior High

The introductory level modules may be offered at junior high. Because many students entering junior high school may be familiar with computers, it is important to determine the level of competence students have in relation to the competencies defined for the modules.

The number of modules will vary according to the time available throughout Grades 7, 8 and 9:

Time Available	Modules
25 hours	Computer Operations
50 hours	Computer Operations Keyboarding 1
75–100 hours	add one of the following: Word Processing 1 Graphic Tools Database 1 Spreadsheet 1 Hypermedia Tools Programming 1

Where appropriate, junior high school students may also take intermediate level modules, particularly in the Text/Data Input and Productivity Software themes.

Modules may be combined into courses and offered within a school year or over a span of a few years.

Information Processing in Senior High

Following are a few examples of module groupings into sample courses:

5 credits (no previous experience)	Computer Operations Keyboarding 1 Word Processing 1 Database 1 Spreadsheet 1
3 credits (strong background from junior high school or through personal experience)	Keyboarding 1 Database 1 Spreadsheet 1
5–15 credits (foundation for entry into workplace as computer technician)	Computer Operations Keyboarding 1 Word Processing 1 Database 1 Spreadsheet 1 and modules selected from System Operations theme and Programming theme
5–15 credits (foundation for entry into workplace into administrative support positions)	Keyboarding 2 Word Processing 2 Database 2 Spreadsheet 2 Electronic Publishing 1 and modules selected from the Applied Processing theme and Productivity Software theme

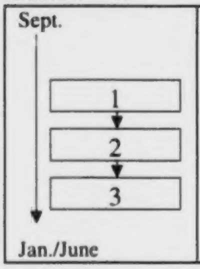
Modules could also be grouped into comprehensive courses that emphasize a particular theme.

Organizing for Learning

Before selecting modules, teachers should check the module parameters outlined in each module (see Sections D, E and F of this Guide).

Modules can be delivered sequentially, concurrently or combined. For example, although the modules from the Text/Data Input theme and the Programming theme are sequential, they can be combined with modules from the System Operations theme, the Productivity Software theme, or the Applied Processing theme; e.g.:

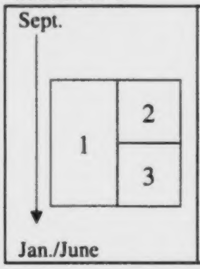
Scenario A



Modules may be taught sequentially, e.g.:

Programming 1
↓
Programming 2
↓
Programming 3

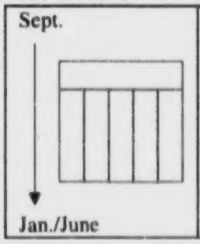
Scenario B



One module, such as Keyboarding 1, may be taught throughout the course (e.g., 20 minutes per class) in conjunction with two other modules.

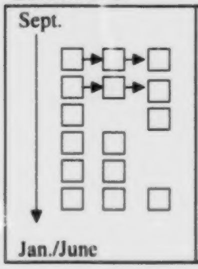
Teachers can also allow students to progress at a rate that is personally challenging; e.g.:

Scenario C



All students take one or two modules together, then are able to select modules from a menu of modules.

Scenario D



From a list of modules defined by the teacher, the students select which ones they will work on and, in consultation with the teacher, establish timelines for completion and submission of assignments, etc.

Recurring Concept—Workstation Management

Each module in Information Processing requires students to consistently apply appropriate workstation routines. This requires students to demonstrate responsibility and professionalism throughout the instruction period as they:

- manage and use the workstation and related resources
- make efficient and effective use of their own and others' time
- learn in as independent a manner as possible
- use related terminology appropriately, both verbally and in print.

An emphasis of 10 percent has been allocated in each module for workstation management.

Identifying Linkages

Section H of this Guide describes some of the linkages that are possible between the Information Processing strand and other CTS strands.

Project and practicum modules are **not** designed to be offered as distinct courses and should **not** be used to extend Work Experience 15, 25 and 35 courses.

Improving Smooth Transition to the Workplace and/or Related Post-secondary Programs

Refer to Section H of this Guide for potential transitions students may make into the workplace and/or related post-secondary programs or other avenues for further learning.

MODULE CURRICULUM AND ASSESSMENT STANDARDS:

INTRODUCTORY LEVEL

The following pages define the curriculum and assessment standards for the introductory level of Information Processing.

Introductory level modules help students build daily living skills and form the basis for further learning. Introductory modules are developed for students who have no previous experience in the strand.

Module learner expectations define the competencies a student must demonstrate to achieve success in a module. Assessment standards define the conditions and criteria to be used for assessing the competencies defined in the module learner expectations.

Specific learner expectations provide a detailed framework for instruction to help students build the competencies defined in the module learner expectations. Additional information and suggestions for instruction are provided in the Notes column; teachers may wish to use this space to record their ideas for instruction or student projects.

Module INF1010: Computer Operations D.3
Module INF1020: Keyboarding 1 .... D.7
Module INF1030: Word Processing 1 .... D.11
Module INF1040: Graphics Tools D.15
Module INF1050: Database 1 .... D.19
Module INF1060: Spreadsheet 1 .... D.25
Module INF1070: Hypermedia Tools D.31
Module INF1080: Programming 1 .... D.35
Module INF1090: Information Highway 1 .... D.41

MODULE INF1010: **COMPUTER OPERATIONS**

Level: Introductory

Theme: Systems Operations

Prerequisite: None

Module Description: Students develop personal use skills basic to all modules in the Information Processing strand in the following applications: file management, basic hardware and software operations, text entry and workstation routines.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate basic file management skills	• demonstrating effective and efficient file management techniques. *Assessment Tool* *Assessment Checklist A: File Management Procedures (INF1010–1)* *Standard* *All procedures must be demonstrated*	10
• enter text and data, using the proper touch keyboarding technique	• demonstrating touch keyboarding technique. *Assessment Tool* *Assessment Checklist B: Text–Data Entry (INF1010–1)* *Standard* *All procedures must be demonstrated*	50
• identify components of a computer workstation and basic functions of a computer	• identifying and explaining use of computer workstation components. *Assessment Tool* *Assessment Checklist C: Computer Workstation Components (INF1010–1)* *Standard* *All procedures must be demonstrated*	10

BEST COPY AVAILABLE

MODULE INF1010: COMPUTER OPERATIONS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• describe one or more recent initiatives or issues in technological development	• preparing a report (oral, print or multimedia). The report will provide a clear and concise description of: – current or emerging technological initiative or issue – actual or potential impact on individual and society – a list of sources of information. *Assessment Tool* *Assessment Guide: Presentations and Reports (INF1010–2)* *Standard* *Rating of 1 on each component*	20
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *1 – Time Management/Organization* *2 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF1010: COMPUTER OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
File Management	*The student should:* • use appropriate commands to boot/access computer system(s): – standalone – network • demonstrate ability to: – create, name, save and close files – retrieve and open files – print files.	
Text/Data Entry	• demonstrate "touch keyboarding" skills with alphabetic and basic punctuation keys using proper techniques characterized by: – correct fingering – appropriate body position – acceptable eye focus • proofread and edit text or data as appropriate to ensure error-free documents, including: – manually proofread copy and compare copy with original text on: • screen • hard copy – use software editing functions (spell check. grammar checks).	The emphasis is on developing touch stroking, using correct fingering. Keyboarding speed is developed in the Keyboarding modules.
Workstation Components and Computer Functions	• identify and describe basic computer functions, related to the workstation hardware and software that is in use, including: – hardware architecture, configurations and peripherals: • input (keyboard, scanners, voice, etc.) • processing • storage • output (screen, printer) • telecommunications – types of software: • system • application • utility – key procedures: • operating • backup • preventive/emergency • use related terminology appropriately.	

MODULE INF1010: COMPUTER OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
	The student should:	
Initiatives and Issues in Technology	• research one or more recent initiatives or issues that relate to computer technology • prepare a report (verbal, print or multimedia) that: – provides a clear and concise description of the initiative or issue – describes actual or potential impact on the individual and/or society in – lists sources of information.	Topics could relate to initiatives or issues in: – personal life – professional life – privacy – security – ethical – computer infections (viruses, worms) – future trends.
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1020: KEYBOARDING 1

Level: Introductory

Theme: Text/Data Input

Prerequisite: INF1010 Computer Operations

Module Description: Students develop accurate touch keystroking of text and data appropriate to personal use and the application of efficient workstation procedures.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate keyboarding competence:	*Assessment of student achievement should be based on:* • three timed writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :	
– text entry at 20 words per minute (wpm)	– on alphabetic keys • one-minute duration • maximum one uncorrected error • SI ≤ 1.2 • minimum keystroke rate: 20 words per minute	30
– numeric entry at 80 keystrokes per minute (kpm)	– on numeric keypad: • one-minute duration • maximum one uncorrected error • minimum keystroke rate 80 numeric keystrokes per minute on 1 to 3 digit numbers. *Assessment Tool* *Reference Chart: Keyboarding and Numberpad Rates (INFKEYNB)*	10
– technique	– observations over the last quarter of the learning period, during timing and drill work. *Assessment Tool* *Assessment Checklist: Text–Data Entry (INFTDENT)* *Standard* *Rating of:* *3 – Eye Focus* *2 – Keystroking* *1 – Service Keys* *2 – Body Position*	40

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *2 – File Management* *1 – Time Management/Organization* *2 – Professionalism*	20
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Text Entry	• demonstrate increasingly rapid, accurate touch keystroking on straight copy of: – alphabetic keys – punctuation keys (.,;:?) – service keys (enter, shift, delete, backspace, tab) • use function and cursor movement keys efficiently • demonstrate correct keystroking technique – enter text using designated fingers – maintain home-row position – demonstrate correct posture (hand, arm, body) • demonstrate touch entry of numbers on number pad using correct fingering	Technique is the major focus emphasizing touch development on easy material. Develop speed and accuracy at the word and phrase level using short, repetitive timings (12 seconds to one minute) with straight copy text of varying SI (1.0–1.3). Introduce only the word processing and computer commands that are required as an instructional tool for developing keyboarding skill.

MODULE INF1020: KEYBOARDING 1 (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	*The student should:* • proofread and edit text while on screen to ensure text is without error • analyze errors in keystroking and initiate remediation as appropriate for: – spelling, shifting, punctuation and spacing errors – transposed, repeated, omitted letters.	It is recommended that timings be given from previously unseen material that students have not been allowed to practice on.
Data Entry	• demonstrate rapid, accurate data entry on keyboard number pad: – using designated fingers – maintaining anchor position.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1030: **WORD PROCESSING 1**

Level: Introductory

Theme: Productivity Software

Prerequisite: INF1010 Computer Operations

Module Description: Students develop skill in using basic commands and functions in word processing software, including document editing, and the formatting and printing of reports, correspondence and tables suitable for personal use applications.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Supporting Module: INF1020 Keyboarding 1

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate correct use of software functions, by producing mailable, properly formatted:	• producing mailable documents, based on formatted and unformatted sources, focusing on the use of basic software functions for personal use applications including a collection of:	
– paginated reports with headings and references	– reports, including applications such as essays, poems, research reports, journal responses, recipes, notices and posters	30
– letters with basic components	– one-page letters, including applications such as personal and personal business letters	30
– two-column tables with main headings and subheadings	– tables, including applications such as calendars, lists, daybooks, agendas and display documents.	30
	Assessment Tool *Assessment Checklist: Word Processing (INFWP)*	
	Standard *Rating of 1 in the production of mailable documents (no errors in text and well formatted)*	

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *2 – File Management* *1 – Time Management/Organization* *2 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Software Functions and Applications	• describe key features of the word processing software package: – capabilities – system requirements – platform options – command structure • use help functions and references as appropriate • demonstrate appropriate key commands to: – open/create/update files – name files – close files	Integrate the learning of software functions and the production of documents with other subject areas such as Language Arts /English, Social Studies, Science.

MODULE INF1030: WORD PROCESSING 1 (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	*The student should:* • demonstrate appropriate key commands to: – format text • rulers/margins • line spacing • text alignment (left, right, centre, full justified) • tabs/indents • tables • borders/shading • text styles • bulleted and numbered lists • font types/sizes • footers/headers • page numbering • page breaks (hard, widow/orphan) • graphics • print/preview in alternate formats) – file, edit, proofread text • move (cut, copy and paste) • spell and/or grammar check • thesaurus • search and replace • insert/delete text • move through document(s) efficiently by using appropriate cursor movement tools/commands.	Arrows, select, undo, go to.
Document Production	• demonstrate appropriate key commands to produce the following documents in mailable form: – reports such as research papers, essays, position papers, response journals, poems, recipes: • headings/subheading • references (footnotes, end notes, bibliography) • headers/footers • title page – personal and business correspondence such as letters to family and friends, customer complaint letter, letters of applications, letter to teacher, etc.	Mailable form: error-free text and well-formatted. APA and MLA are the two most common report styles—articulate with English/LA teachers and use the same style. Full block style is the easiest style to present at this level.

MODULE INF1030: WORD PROCESSING 1 (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	*The student should:* • letter parts (date, inside address, salutations, complimentary closing, name/title, references) • letter styles – tables (single/multicolumn) such as calendars, announcements, agendas, programs and other types of display typing: • headings • borders • rulers/tabs.	Use software table functions if available.
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1040: GRAPHICS TOOLS

Level: Introductory

Theme: Productivity Software

Prerequisite: INF1010 Computer Operations

Module Description: Students learn the basic commands and functions of computer graphics software, including bitmapped graphics (paint program) and vector graphics (draw program). Students also develop basic skills in manipulating existing graphics, as well as in producing their own graphics.

Module Parameters: Computer workstation, disk, a selection of graphics software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate the basic elements and principles of design, by using computer software graphics tools to:		
– duplicate graphics designs	• reproduction of documents using paint/draw software programs consisting of: – text – graphics (paint, draw and/or imported) – use of design principles. *Assessment Tool* *Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)* *Standard* *Rating of 1 in the reproduction of well-designed graphic layouts*	30
– create graphics layouts	• creation of original documents using paint/draw software programs consisting of: – text – graphics (paint, draw and/or imported) – use of design principles. *Assessment Tool* *Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)* *Standard* *Rating of 1 in the production of well-designed graphic layouts*	30

MODULE INF1040: GRAPHICS TOOLS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate use of software functions	• using the appropriate commands, functions and graphic tools including: – file functions—create/save/load files – editing functions (cut/copy/move/paste/delete) – import graphic (clip art and/or scan) – text tools including style palette – paint tool (colour, fill, texture) – draw tools (line, rectangle, oval, cropping) – output functions (preview and print). *Assessment Tool* *Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)* *Standard* *Rating of 1 in the demonstration of appropriate software functions*	30
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *2 – File Management* *1 – Time Management/Organization* *2 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF1040: GRAPHICS TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications	*The student should:* • describe key features of the graphic software packages available: – capabilities – system requirements – platform options – command structure • use help functions and references as appropriate • demonstrate use of appropriate commands, functions and tools, such as: – copy, paste, cut – ovals, rectangles, line and polygons – marque, lasso – eraser – fills – line options; e.g., arrows, patterns – inserting (placing) – resizing – repositioning – rulers – column guides – alignment – letter spacing – leading – kerning – typefaces (font, style) – indent – tabs – cropping • create/load/merge/import/scan graphic elements/objects/files: – presentation graphics (charting/diagramming/drawing) paint – resident functions (clip art) • demonstrate use of tools such as: – pixel bit-mapped object-oriented images – line/geometric object-oriented images using vector graphics • demonstrate use of computer-aided design, if available: – create computer graphics for design, drafting, documentation purposes • demonstrate use of screen capture/graphics conversion: – integrate all forms of graphic elements including clip art design/merge/format/edit page (text/data/graphics).	Pixel and vector graphics are two basic software approaches to the production of images and range from free drawing screen activities to computer generated/controlled graphic designed elements. Graphics software includes toolboxes and palettes, presentations, desktop publishing, artistic creations, space exploration, weather forecasting, computer animation and computer-aided design.

MODULE INF1040: GRAPHICS TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Document Production	*The student should:* • practise reproducing a variety of documents from a variety of sources using paint/draw software • apply basic design elements and principles when creating documents • use three-dimensional effects to create depth in documents • design and create various documents using paint/draw programs • use clip art to enhance document production • create own graphics using available paint and draw tools to enhance document • preview and print documents.	For example: line, shape, texture, colour, balance, proportion, contrast, harmony, unity. For example: use of overlapping, perspective, light and dark images, small and large images. For example: letterheads, business cards, advertisement, posters, title pages, logos, packaging, front view of home, floor plan, map to your home.
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1050: DATABASE 1

Level: Introductory

Theme: Productivity Software

Prerequisite: INF1010 Computer Operations

Module Description: Students are introduced to the basic commands and functions of database software, and demonstrate how this software can be used as a personal tool in data and information management.

Module Parameters: Computer workstation, disk, database software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic electronic database software competence, by:	*Assessment of student achievement should be based on:*	
– creating databases	• creating database files/records to solve problems using basic database software functions: – define problem (e.g., manage information, make decisions) – plan, design and create databases to solve problems – enter data into database files – display and print files – use of appropriate software commands and functions to create database files, enter data and print. *Assessment Tool* *Assessment Checklist: Databases (INFDB)* *Standard* *Rating of 1 in the creation of error-free, well-designed database files*	45

BEST COPY AVAILABLE

MODULE INF1050: DATABASE 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
– manipulating data and preparing reports	• manipulating database files in the preparation of reports: – search/query database files to retrieve selected information – plan and present selected data visually through the creation of reports – use appropriate software commands and functions to query/search database files and create reports. – analyze data to make recommendations and conclusions. *Assessment Tool* *Assessment Checklist: Databases (INFDB)* *Standard* *Rating of 1 in the creation of error-free, well-designed reports*	45
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *2 – File Management* *1 – Time Management/Organization* *2 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF1050: DATABASE 1 (continued)

Concept	Specific Learner Expectations	Notes
	The student should:	
Software Commands and Functions	• describe key features of the database software: – capabilities/applications – system requirements – platform options – command structure	
	• use help functions and references as appropriate	
	• demonstrate appropriate commands and functions to organize information in fields	
	• demonstrate appropriate commands and functions to input and process data: – open, create and save database files – enter text and values – enter formulas to calculate and recalculate – use number pad to enter values – use keyboard to enter labels	
	• demonstrate appropriate commands and functions to format fields: – alignment – number format ($, %, decimals) – text styles – font type and size – field length – borders and shading – formulas	
	• demonstrate appropriate commands and functions to edit and manipulate data: – proofread, edit (cut, copy, paste, clear) – search – calculate – change sequence	Check data input for accuracy. Highlighting to change. Changing size. Update files/records. View files/split screen.
	• demonstrate appropriate commands and functions to sort data (ascending and descending): – alphabetic – numeric – subject	

MODULE INF1050: DATABASE 1 (continued)

Concept	Specific Learner Expectations	Notes
Software Commands and Functions (continued)	*The student should:* • move through a database efficiently by using appropriate cursor movement tools and commands • demonstrate appropriate commands and functions to create well-formatted reports: – select and sort files for reports – title reports – calculate statistics in a reports – select text style, font type and size – determine column sequence and size – modify data for specific reports • demonstrate appropriate commands and functions to retrieve, display and print information: – form view – list view – query view – report view – print files and reports in portrait and landscape.	Move through record(s) efficiently: – cursor movement/status line/mouse – split screen/move between planes/remove split.
Document Production	• access data and define problems (e.g., manage information, make decisions) • plan and design database files to solve problems: – identify fields (location, name and size) • input and process data: – create template file – enter data into files – update and edit data in files • output reports: – save files – manipulate data – preview records – print records • demonstrate appropriate format specifications and layout to create appropriate reports • analyze data to draw conclusions and make recommendations • cite references of data where appropriate.	Update files as required to add, delete and edit records. Topic suggestions. Personal information. Student demographics. Collections: – sports pools – music/tapes – books. Identify/collect/organize information/ resources.

MODULE INF1050: DATABASE 1 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1060: **SPREADSHEET 1**

Level: Introductory

Theme: Productivity Software

Prerequisite: INF1010 Computer Operations

Module Description: Students have an opportunity to use basic functions and commands in spreadsheet software for general data manipulation and personal record keeping.

Module Parameters: Computer workstation, disk, spreadsheet software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic electronic spreadsheet software competence, by:	*Assessment of student achievement should be based on:*	
– creating spreadsheets	• creating spreadsheets to solve problems using basic spreadsheet software functions: – define problems (e.g., manage information, make decisions) – plan, design and create spreadsheets to solve problems – enter data onto spreadsheets – preview/print spreadsheets – use appropriate software commands and functions to create spreadsheets, enter data and print. *Assessment Tool* *Assessment Checklist: Spreadsheets (INFSS)* *Standard* *Rating of 1 in the creation of error-free, well-designed spreadsheets*	45
– manipulating data and preparing chart graphs	• manipulating data in spreadsheets to visually present data in chart graph format: – select data from spreadsheet to present in graphic format – select appropriate graph to present data – plan and present data visually through the creation of chart graphs – use appropriate software commands and functions to create visually pleasing detailed graphs – analyze data to draw conclusions and recommendations.	45

BEST COPY AVAILABLE

MODULE INF1060: SPREADSHEET 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:* *Assessment Tool* *Assessment Checklist: Spreadsheets (INFSS)* *Standard* *Rating of 1 in the creation of error-free, well-designed chart graphs*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *2 – File Management* *1 – Time Management/Organization* *2 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
Software Commands and Functions	*The student should:* • describe key features of the spreadsheet software: – capabilities/applications – system requirements – platform options – command structure • uses help functions and references as appropriate • demonstrate appropriate commands and functions to input and process data: – open/create/save files – enter text (headings and labels) – enter values (numbers, dates, time) – enter formulas to calculate and recalculate data – replicate cells/formulas – use number pad—values – use keyboard—labels • demonstrate appropriate commands and functions to format cells, rows, columns: – alignment – number format ($, %, decimals) – text styles – font types/sizes – column widths/row heights – borders/shading • demonstrate appropriate commands and functions to enter basic formulas using: – operators (+., -, * and /) – number, constant values (e.g., 1, 10, 12.5, -16) – cell and range references (e.g., A10, A1:A25) – functions (e.g. sum, avg., min/max) – copy/paste or fill functions • demonstrate appropriate commands and functions to edit cells, rows, columns, data: – moving data and formulas – copying – clearing – replacing • demonstrate appropriate commands and functions to sort data (ascending, descending): – numeric – alphabetic	Create a spreadsheet by: – identifying an application – designing the format. Potential projects: – personal worksheets – budgets – recipes – grades records – inventories – financial problem solving – table comparisons.

MODULE INF1060: SPREADSHEET 1 (continued)

Concept	Specific Learner Expectations	Notes
Software Commands and Functions (continued)	*The student should:* • move through worksheet(s) efficiently by using appropriate cursor movement tools/commands: – split screen – freeze • use appropriate software commands and functions to create visually pleasing detailed graphs: – name/update/open charts – label axes – select colours and patterns – label legends, titles and subtitles – select fonts (types and sizes) – use gridlines and borders – change page and margin settings • demonstrate appropriate commands and functions to output results: – display worksheets and graphs: – print worksheet and chart graphs: • portrait • landscape • use appropriate headers/footers/references.	
Document Production	• access data and define problems (manage information and make decisions) • plan and design spreadsheets to solve problems: – identify columns and rows (location, name, size) • input and process data: – create worksheet template – enter data into spreadsheet – update and edit data on worksheet • output data: – print worksheets in alternate formats (portrait and landscape) – create visual presentations of data through chart graphs: • select data from spreadsheets to present in graphic format • select appropriate chart graphs • plan and present data in chart graphs	

MODULE INF1060: SPREADSHEET 1 (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	*The student should:* • analyze data to draw conclusions and recommendations • print chart graphs in alternative formats • cite references of data where appropriate.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1070: HYPERMEDIA TOOLS

Level: Introductory

Theme: Dynamic Environment

Prerequisite: INF1010 Computer Operations

Module Description: Students develop basic skills with tools used for computerized presentations involving text, data, graphics, sound and animation.

Module Parameters: Computer workstation, disk, hypermedia software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic hypermedia software competence, by:	*Assessment of student achievement should be based on:* • production of a short presentation consisting of the following:	
– accessing hypermedia tools	– planning: • demonstrate ability to use software commands and functions of selected hypermedia software program • make decisions regarding text, sound, graphics, video and animation • prepare a storyboard	20
– applying hypermedia tools to produce a short presentation	– producing the presentation by using appropriate software commands and functions to: • create, enhance and manipulate text • create, select and manipulate graphics • create, select and manipulate sound • insert premade video clip • create a frame, object or cell-based animation clip	50
– using hypermedia tools to edit a short presentation	– editing the presentation by: • proofreading for spelling and accuracy of facts • check graphics • test program links to make sure they work appropriately • edit to enhance the quality of the presentation.	20
	Assessment Tool *Assessment Checklist: Multimedia Software Functions (INFMMSF) and Multimedia Productions and Presentations (INFMMDOC)* *Standard* *Rating of 1 in the production of presentation*	

MODULE INF1070: HYPERMEDIA TOOLS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *2 – File Management* *1 – Time Management/Organization* *2 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Multimedia Skills	• access hypermedia program • tour program with direction • select and use teacher-specified program components • complete tasks assigned covering accessing and manipulating: – text – data – graphics – sound – animation.	Skills are built in this part of the module that can be applied in the production of the presentation. Teachers will need to determine the extent of the skill development required by their students.

Concept	Specific Learner Expectations	Notes
Multimedia Application	*The student should:* • produce a short presentation using the following process: – identify project – design storyboard – determine components (text, sound, graphics, video, animation) – collect required support resources – produce presentation – present presentation.	Students should be able to produce a simple presentation with limited assistance. Teachers will need to determine the minimum skill requirements.
Multimedia Software Commands	• apply hypermedia software commands to: – load/create/customize/modify multimedia presentation • enter data: – key load data – create/import graphics – access/manipulate presentation components – create background – edit/modify/update buttons, cards, fields – use resident commands/scripting to link pages – incorporate text (alphabetic, numeric), graphics, motion, sound • display/print/export: – pages/components – report on stored information.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures	

MODULE INF1070: HYPERMEDIA TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management (continued)	*The student should:* • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1080: **PROGRAMMING 1**

Level: Introductory

Theme: Programming

Prerequisite: INF1010 Computer Operations

Module Description: Students are introduced to computer programming languages and a structured programming environment, and they construct algorithms and code instructions to solve identified problems.

Module Parameters: Workstation, programming language, language code manual, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic computer programming skills, by: – creating algorithms to solve problems – applying introductory, structured computer coding programming skills	*Assessment of student achievement should be based on:* • developing programs that demonstrate the ability to solve problems through the efficient use of algorithms and language syntax. Demonstrate ability to: – use a linear algorithm to provide a solution to a problem – arrange the components of the problem in the categories of input, process and output – interpret the output required – use language-specific techniques to assign values to variables and constants – employ language-specific mathematical operators for addition, subtraction, multiplication, division – illustrate language-specific structures for output formatting – test specific data to verify the validity of the program – document program internally and externally. *Assessment Tools* *Assessment Checklist: Introductory and Intermediate Programming (INFPRGM1)* *Programming: Sample Assignment 1A (INFPSAM1)* *Standard* *Rating of 1 in all phases of program development*	90

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **apply, consistently, appropriate workstation routines**	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *1 – Workstation Use* *2 – File Management* *1 – Time Management/Organization* *2 – Professionalism*	10
• **demonstrate basic competencies.**	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Computer Software	• explain how software is the interface between humans and computer hardware and converts general-purpose computers into specialized problem-solving systems • describe the purpose of system software: – operating systems (command-driven, icon-driven) – language translators (assemblers, compilers, interpreters) – utilities (preprogrammed functions) • describe application software: – application packages (text, data, graphics, process control, simulations) – customized programs (written for specific organizational function) • differentiate between integrated and dedicated software	

MODULE INF1080: PROGRAMMING 1 (continued)

Concept	Specific Learner Expectations	Notes
Computer Software (continued)	*The student should:* • research sources of software availability: – externally – internally (in-house development/ organizational processing) • research software resource support: – user's manual – operating instructions – copyright contract • describe the purpose of a computer programming language • describe computer programming language categories: – machine-oriented – procedure-oriented – object-oriented • identify several computer languages/structures and their focus • compare several computer language instructions • identify data types/strings • describe constants, variables • describe methods of program data input: – embed data in program – read a data file – enter interactively • explain data manipulation/processing: – operators – decision control – branching – looping • illustrate various formats for data/information output: – text reports – data tables – graphics • explain the differences between programming and code cutting.	Buy lease, shareware, network/electronic bulletin board, retail outlets, computer manufacturers, magazines, professional association, user groups.

Concept	Specific Learner Expectations	Notes
Algorithms	*The student should:* • describe the purpose of an algorithm • describe flowchart symbols • analyze a structured design • identify/describe the problem • describe each step required to solve the problem • describe the appropriate logic to achieve the solution • create a structured schematic/flowchart or pseudocode indicating how the solution will be achieved.	
Structured Programming	• differentiate between syntax and logic • describe/illustrate examples of structured programming and indicate why it is important: – top-down programming • explain structured programming constructs: – sequence, selection – repetition.	
Structured Computer Programming Applications	• access appropriate computer language resource support • code simple programming tasks (i.e., I/P/O program following predefined format) • prepare simple displays of text/data/font graphics • key/code simple computer program(s) to solve simple problem(s): – identify logical solution – flowchart the algorithms – design output format – code the instructions – test run program – debug/edit – execute program – assess activities/results.	

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF1090: **INFORMATION HIGHWAY 1**

Level: Introductory

Theme: Dynamic Environment

Prerequisite: INF1010 Computer Operations

Module Description: Students develop personal use Internet skills for accessing and communicating data and information, with particular emphasis on the world wide web and e-mail.

Module Parameters: Access to a computer workstation and the Internet.

Supporting Module: INF1030 Word Processing 1

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate knowledge of the history of the Internet and of its basic functions	• a project related to: – history of the Internet – access to Internet – using basic terminology and commands – exploring the Internet to discover its potential – finding information regarding proper "netiquette" (Internet etiquette) – personal safety and security. *Assessment Tool* *Assessment Guide: Information Highway 1 – Getting Started (INF1090–1)* *Standard* *Rating of 1 for each applicable task*	20
• demonstrate ability to communicate with others through the Internet	• communicating through the Internet (internal or external) using e-mail and at least one other of the following: – on-line chatting – newsgroups – mailing lists/listservs – other technologies as they emerge. (**Note**: This is a dynamic list that changes rapidly as technologies come and go; learning opportunities should reflect what is currently available.) *Assessment Tool* *Assessment Guide: Information Highway 1 – Communicating (INF1090–1)* *Standard* *Rating of 1 for each applicable task*	30

MODULE INF1090: INFORMATION HIGHWAY 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate ability to access and report specific information from the world wide web	• accessing specific information through a prescribed research topic: – use a variety of directories and search engines to locate specific information – download information – cut/paste/edit, format collected data into a report/ presentation – properly cite information from Internet sources. *Assessment Tool* *Assessment Guide: Information Highway 1 – Access and Report Specific Information (INF1090–1)* *Standard* *Rating of 1 for each applicable task*	40
• apply, consistently, appropriate workstation routines	• demonstration of appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTA)* *Standard* *Rating of:* *1 – Workstation Use* *2– File Management* *1– Time Management/Organization* *2– Professionalism*	10
• demonstrate basic competencies.	• observation of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF1090: INFORMATION HIGHWAY 1 (continued)

Concept	Specific Learner Expectations	Notes
	The student should:	
Getting Started	• explain the difference between the Internet and the World Wide Web • define and describe the Internet; e.g., FTP, www, gopher, telnet • identify various uses of the Internet for: – personal use – educational use – business use • compare functions and terminology between e-mail, the Internet and commercial on-line services • define and identify service providers • use compatible software to access the Internet • access web site addresses • describe ethical uses of the Internet • locate and discuss information related to netiquette (network etiquette) • research issues and strategies related to maintaining personal safety and security • read, describe and sign required consent form regarding acceptable use policies as set out by provider of service.	Exchange ideas, retrieve information for research and personal use, try software, move information to others, requirement for future employment, on-line chats, shopping, advertising. Many school districts require students to sign a consent form before access to Internet is allowed.
Communicating	• use an e-mail program: – gain access to mail – obtain and use an e-mail address – practise sending mail to self and others – send attachments/enclosures – access mailbox; read and file mail – reply to an e-mail message sent to him or her – organize mailbox (file, delete, save messages to student's own account) • research live chat sites, newsgroups, listservs • describe and/or use net phone • identify other emerging communication strategies related to the Internet.	Note: Internal e-mail can be used to simulate Internet e-mail.

Concept	Specific Learner Expectations	Notes
Finding, Collecting, Editing and Reporting Data	*The student should:* • identify net servers and when to use each • identify search engines • use search engines efficiently • research various web sites within the Internet: – use search engines – access files – use menu alternatives (bookmarks, icons, keying in) • read and print file(s) • download files and/or sites (text, sound, graphics, video) • cut/paste/edit and format collected data into a report/presentation • properly cite Internet sources • use bookmarks (add, delete).	See *PC World*, Jan./96, pp. 125–129, for searching techniques. Note: A teacher-directed research project is more appropriate at this level. See latest edition of APA manual.
Workstation Management	• apply efficient workstation positions and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies when using the Internet and on-line commercial services • use related terminology to describe basic protocols, processes and tools.	

MODULE CURRICULUM AND ASSESSMENT STANDARDS:
SECTION E: INTERMEDIATE LEVEL

The following pages define the curriculum and assessment standards for the intermediate level of Information Processing.

Intermediate level modules help students build on the competencies developed at the introductory level and focus on developing more complex competencies. They provide a broader perspective, helping students recognize the wide range of related career opportunities available within the strand.

Module INF2010: Workstation Operations E.3
Module INF2030: Keyboarding 2 .... E.9
Module INF2040: Keyboarding 3 .... E.13
Module INF2050: Word Processing 2 .... E.17
Module INF2060: Electronic Publishing 1 .... E.21
Module INF2070: Database 2 .... E.27
Module INF2080: Spreadsheet 2 .... E.31
Module INF2090: Correspondence E.35
Module INF2100: Reports E.39
Module INF2110: Tables/Forms E.43
Module INF2120: Software Integration 1 .... E.49
Module INF2130: Multimedia Authoring 1 .... E.53
Module INF2140: Process Control E.57
Module INF2150: Programming 2 .... E.61
Module INF2160: Programming 3 .... E.67
Module INF2170: Programming 4 .... E.75
Module INF2180: Programming 5 .... E.81
Module INF2190: Telecommunications 1 .... E.87
Module INF2200: Information Highway 2 .... E.93

MODULE INF2010: WORKSTATION OPERATIONS

Level: Intermediate

Theme: System Operations

Prerequisite: INF1010 Computer Operations

Module Description: Students learn computer workstation operations, including computer architecture, peripherals, configurations, operating system environments and platforms, utility software, diagnostic and protection software, hard drive file updating and maintenance, support resource application and troubleshooting activities.

Module Parameters: Computer workstation, disk, utility software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • use file management procedures efficiently • install and use software to support the integrity of workstation hardware	*Assessment of student achievement should be based on:* • a workstation project demonstrating the ability to – set up and install a system: • identify need of users and tools (software, hardware) • design a plan for installation and configuration of the system • organize tools for installation and configuration • use manuals during the set-up and installation process • connect hardware (e.g., system and cabling) • install software (well-organized and appropriately named directories on specified drive) for a variety of software including operating system, applications and utilities. *Assessment Tool* *Assessment Guide: Workstation Operations, Set Up and Install a System (INF2010–1)* *Standard* *Rating of 2 in each applicable task*	50

BEST COPY AVAILABLE

MODULE INF2010: WORKSTATION OPERATIONS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• configure and maintain workstation hardware	– troubleshoot software and hardware: • test system after installation • test system with users for satisfaction • build a defence system against viruses • build a defence system against intentional and unintentional use exploration • identify and organize available resources for users (e.g., help, tutorials, manuals, courseware) – manage and maintain a system: • outline long-term plan for upgrading technology • establish policy and procedures of effective use of the technology • provide training and support for those using system. *Assessment Tool* *Assessment Guide: Workstation Operations (INF2010–1)* *Standard* *Rating of 2 in each applicable task*	40
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF2010: WORKSTATION OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
Software Installation and Use	*The student should:* • install/update software: – create/use directories/folders backup/restore files – save/load files in various formats • use appropriate operating system software commands for: – defaults/supervising/housekeeping • use utilities software: – pre-established routines – diagnostic – viral protection – communications – shell – spooler • use application software: – integrated/independent software – windows – menus/icons – help screens • use language translators: – assemblers – compilers – interpreters • load software application packages/customized programs • recommend software applications: – identify system requirements for various software packages.	Computer information processing systems consist of specific activities—input, process, output, storage. However, each of these functions involves the interface of various hardware components integrally supported by a variety of software programs all integrated into a particular operating system.
Hardware Configuration and Use	• configure/interface hardware/peripherals, communication protocols: – arrange physical placement of peripherals/components – connect/disconnect/reconnect communication lines • compare architecture/functions of computer processing systems (both standalone and network): – processors – input/output hardware	

Concept	Specific Learner Expectations	Notes
Hardware Configuration and Use (continued)	*The student should:* – storage components/capacity – interface protocols – clock speed – physical dimensions – size • describe/use available computer platforms: – DOS – UNIX.	
Policies and Procedures	• follow established troubleshooting procedures for: – diagnosis – remediation • describe effective policies and procedures for: – system/software access – security/protection – data integrity – obsolescence – ethical considerations – legal constraints – managing environmentally friendly routines: • paper disposal • toner/ribbon • old equipment.	Follow hardware/software and educational instructions.

MODULE INF2010: WORKSTATION OPERATIONS (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2030: **KEYBOARDING 2**

Level: Intermediate

Theme: Text/Data Input

Prerequisite: INF1020 Keyboarding 1

Module Description: Students enhance their personal use keyboarding competencies by increasing the rate of accurate touch keystroking of the alphabetic, numeric and selected punctuation keys.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate keyboarding competence:	• three timed writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :	
– at 30 words per minute (wpm)	– on alphabetic keys • two-minute duration • maximum one uncorrected error • SI ≤ 1.25 • minimum keystroke rate: 30 words per minute	50
– numeric entry at 100 keystrokes per minute (kpm)	– on numeric keys: • one-minute duration • maximum one uncorrected error • 100 numeric keystrokes a minute on 1 to 3 digit numbers. *Assessment Tool* *Reference Chart: Keyboarding and Numberpad Rates (INFKEYNB)*	10
– technique	– observations over the last quarter of the learning period, during timings and drill work. *Assessment Tool* *Assessment Checklist: Text–Data Entry (INFTDENT)* *Standard* *Rating of:* *3– Eye Focus* *3 – Keystroking* *2 – Service Keys* *3 – Body Position*	30

BEST COPY AVAILABLE

MODULE INF2030: KEYBOARDING 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Text Entry	• demonstrate increasingly rapid, accurate touch keystroking on straight copy of: – alphabetic keys – number keys – punctuation keys (.,;:?'"()!-_) – symbol keys $., &, % – service keys (enter, shift, delete, backspace, tab) • use function and cursor movement keys efficiently	Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (12 seconds to one minute) with straight copy text of varying SI (1.0–1.4).

MODULE INF2030: KEYBOARDING 2 (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	*The student should:* • demonstrate correct keystroking technique: – enter text using designated fingers – maintain home-row anchor position – demonstrate correct posture (hands, arms, body) • proofread and edit text (screen and hard copy) to ensure text is without error • analyze errors and initiate remediation as appropriate for: – spelling, shifting, punctuation and spacing errors – transposed, repeated, omitted letters.	
Data Entry	• demonstrate rapid, accurate data entry on keyboard number pad: – using designated fingers – maintaining anchor position.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2040: **KEYBOARDING 3**

Level: Intermediate

Theme: Text/Data Input

Prerequisite: INF2030 Keyboarding 2

Module Description: Students enhance their keyboarding competencies, by increasing the rate of accurate touch keystroking of alphabetic, numeric and all punctuation keys to support personal use and limited, entry-level, workplace opportunities.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate keyboarding competence:	• three timed writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :	
– text entry at 40 words per minute (wpm)	– on alphabetic keys • two-minute duration • maximum one uncorrected error • SI 1.2 – 1.35 • minimum keystroke rate: 40 words per minute	50
– numeric entry at 120 keystrokes per minute (kpm)	– on numeric keys: • one-minute duration • maximum one uncorrected error • 120 numeric keystrokes a minute on 1 to 4 digit numbers. *Assessment Tool* *Reference Chart: Keyboarding and Numberpad Rates (INFKEYNB)*	10
– technique	– observations over the last quarter of the learning period, during timings and drill work. *Assessment Tool* *Assessment Checklist: Text-Data Entry (INFTDENT)* *Standard* *Rating of:* *4 – Eye Focus* *3 – Keystroking* *2 – Service Keys* *3 – Body Position*	30

MODULE INF2040: KEYBOARDING 3 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Text Entry	• demonstrate increasingly rapid, accurate touch keystroking on straight copy of: – alphanumeric keys – all punctuation keys – service keys (enter, shift, backspace, tab) • use function and cursor movement keys efficiently • demonstrate correct keystroking technique: – enter text using designated fingers – maintain home-row anchor position – demonstrate correct posture (hands, arms body) • proofread and edit text (screen and hard copy) to ensure text is error free	Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (.5 to one minute) with straight copy text of varying SI (1.2–1.5).

MODULE INF2040: KEYBOARDING 3 (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	*The student should:* • analyze errors and initiate remediation as appropriate for: – spelling, shifting, punctuation and spacing errors – transposed, repeated, omitted letters.	
Data Entry	• demonstrate rapid, accurate data entry on keyboard number pad: – using designated fingers – maintaining anchor position.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2050: WORD PROCESSING 2

Level: Intermediate

Theme: Productivity Software

Prerequisites: INF1020 Keyboarding 1
INF1030 Word Processing 1

Module Description: Students expand their skills in using word processing software commands and functions to produce mailable reports and correspondence, including letters, memorandums and tables, all from rough draft copy.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Supporting Module: INF2030 Keyboarding 2

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate correct use of word processing software functions by producing mailable, well-formatted:	• producing mailable documents, based on formatted and unformatted sources focusing on the continued learning and improved use of software functions through personal and business applications including a collection of:	
– paginated reports, with headers, footers and title pages	– reports containing: • headings and subheadings • headers/footers • outline • display paragraph • title page • references (footnotes, endnotes, bibliography).	30
– letters with special notations in a designated letter style	– letters containing basic letter parts plus: • special notations • a specified style • a subject line • an attention line	20
– memorandums	– memorandums containing: • basic memo parts • use of a memorandum style	10

BEST COPY AVAILABLE

MODULE INF2050: WORD PROCESSING 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
– multicolumn tables with borders and footnotes	– multicolumn tables containing: • main titles and subtitles • column heads • borders • footnotes • sorted • box/ruled. *Assessment Tool* *Assessment Checklist: Word Processing (INFWP)* *Standard* *Rating of 2 in the production of mailable documents (no errors in text and well formatted)*	30
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF2050: WORD PROCESSING 2 (continued)

Concept	Specific Learner Expectations	Notes
Basic Software Functions and Applications	*The student should:* • describe key features of the word processing software package: – capabilities – system requirements – platform options – command structure • demonstrate improvement in the use of previously learned software functions • use help functions and references as appropriate • move through document(s) efficiently by using appropriate cursor movement tools/commands.	This is important if using a different word processing software package Arrows, select, undo, goto.
New Software Functions and Applications	• demonstrate skill in the use of additional software functions including: – columns and tables – footnotes/endnotes – drawing tools – inserting graphics in boxes – preset macros – create simple macros – templates – autotext – mail merges – envelopes and labels features – basic math calculations – other formatting functions such as style gallery auto format, auto table – additional auto functions such as table of contents, figures, index, outlines.	

MODULE INF2050: WORD PROCESSING 2 (continued)

Concept	Specific Learner Expectations	Notes
Document Production	*The student should:* • demonstrate appropriate key commands to produce the following documents in mailable form: – reports: • headings/subheading • references (footnotes, end notes, bibliography) • headers/footers • displayed paragraphs • title page – outlines – personal and business correspondence: • letter parts (date, inside address, salutations, complimentary closing, name/title, references) • letter styles • subject/attention lines • special notations – memorandums: • memo parts • memo styles – tables (single/multicolumn): • headings • borders/shading • rulers/tabs.	Mailable form: error free and well formatted. Print documents in both portrait, landscape. Use software table functions.
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2060: ELECTRONIC PUBLISHING 1

Level: Intermediate

Theme: Productivity Software

Prerequisites: INF1030 Word Processing 1
INF1040 Graphics Tools

Module Description: Students develop skill, using electronic/desktop publishing software to create a variety of camera-ready documents.

Module Parameters: Computer workstation, disk, electronic/desktop publishing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic electronic publishing software competence, by using page make-up tools and commands to produce camera-ready publications	*Assessment of student achievement should be based on:* • reproducing accurate, well-designed one- and two-page camera-ready publications focusing on the use of basic software functions and layout principles including: – use of basic formatting functions – use of page make-up tools (including pointer, line, text, rectangle, oval, cropping, etc.) – basic editing functions – layout principles such as optical centre, balance, white space, columns, Z pattern, contrast, rhythm, unity. *Assessment Tools* *Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)* *Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)* *Standard* *Rating of 2 in the production of accurate, well-designed publications*	45

MODULE INF2060: ELECTRONIC PUBLISHING 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
	• creating accurate, well-designed one- and two-page original publications focusing on continued use of basic software functions and layout principles including: – text (body and display) – graphics and/or artwork – text and graphic enhancement – the following of copyright laws – layout principles such as optical centre, balance, white space, columns, Z pattern, contrast, rhythm, unity. *Assessment Tools* *Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)* *Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)* *Standard* *Rating of 2 in the production of accurate, well-designed publications*	45
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF2060: ELECTRONIC PUBLISHING 1 (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications	*The student should:* • describe key features of the desktop software package: – capabilities – system requirements – platform options – command structure	Desktop publishing software: – analyze/evaluate – compare distinguishing characteristics.
	• describe the factors that affect desktop publishing layout: – budget considerations – time constraints – nature of audience/message – conditions of presentation	Evaluate software for integration capability with desktop publishing applications: – word processing – spreadsheet – database – chart graphics – presentation graphics.
	• describe links/economies between typesetting-publishing and desktop publishing applications	
	• demonstrate appropriate key commands to: – open/create files/templates – enter text/graphics: • scan/import file • merge • cut and paste – name files	Identify data input (text and graphics) sources. Access available typefaces, clip art.
	• use help functions and references as appropriate	Desktop applications: – personal documents – class assignments – signs, announcements, invitations, advertisements – brochures (single-, folded-page) – school newsletter, newspaper, yearbook – community activities – business applications.
	• demonstrate appropriate key commands to: – format text: • graphics on screen ruler guides • columns, borders, margins • gutters, baselines • alignment, hyphenation • letter spacing, kerning, line spacing • typefaces (font, style, size) • graphics (placement, adjustment) • indents and tabs • linking text/graphics • linking text/graphics • book publication • graphics (TIFF, ESP, scanned, line art, halftones, gray scales, colour defaults, one-colour) – proofread, edit text (enhance, enlarge, crop, size, scale)	
	• move through document(s) efficiently by using appropriate cursor movement tools/commands	

MODULE INF2060: ELECTRONIC PUBLISHING 1 (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	*The student should:* • customize/edit graphics objects/files plan/create customized desktop templates: – grid-based – placeholder.	
Document Production (Output)	• demonstrate ability to recreate and create well-designed publications through the use of page layout principles such as: – white space – optical centre – balance, formal and informal – 3-D effects – Z pattern – contrast/harmony – rhythm – unity • demonstrate ability to produce accurate publications through the use of proofreading skills • demonstrate appropriate key commands to: – save/export desktop publishing and graphics – display files in a variety of formats – print documents • demonstrate appropriate key commands to produce documents in various desktop published and graphics forms.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures	

MODULE INF2060: ELECTRONIC PUBLISHING 1 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management (continued)	*The student should:* • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2070: **DATABASE 2**

Level: Intermediate

Theme: Productivity Software

Prerequisite: INF1050 Database 1

Module Description: Students use all the commands and functions of electronic database software that support effective and efficient database applications.

Module Parameters: Computer workstation, disk, database software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate advanced level electronic database software competence, by: – creating hierarchical and relational databases	*Assessment of student achievement should be based on:* • creating database files/records to solve problems using more advanced database software functions: – define problem (e.g., manage information, make decisions) – plan, design and create databases to solve problems – enter data into database files – create links to other database files – display and print files – use more advanced software commands and functions to create database files, enter data and print. *Assessment Tool* *Assessment Checklist: Databases (INFDB)* *Standard* *Rating of 2 in the creation of error-free, well-designed database files*	40
– importing and manipulating data and preparing reports	• manipulating database files in the preparation of reports: – link a database file to one or more databases – search/query database files to retrieve selected information – plan and present selected data visually through the creation of reports – use appropriate software commands and functions to search/query database files and create reports – analyze data to make recommendations and conclusions. *Assessment Tool* *Assessment Checklist: Databases (INFDB)* *Standard* *Rating of 2 in the creation of error-free, well-designed reports*	50

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Basic Software Commands and Functions	• describe key features of the database software package: – capabilities – system requirements – platform options – command structure • demonstrate improvement in the use of previously learned software functions • use help functions and references as appropriate • demonstrate appropriate commands and functions to organize information in fields • demonstrate appropriate commands and functions to input and process data • move through a database efficiently by using appropriate cursor movement tools and commands.	

Concept	Specific Learner Expectations	Notes
New Software Commands and Functions	*The student should:* • compare "dbase" models: – hierarchical – relational • format file design parameters: – field, record – file parameters • demonstrate appropriate key commands to: – use query language commands to access information – create/import data – incorporate macros • create graphic data representations: – proofread, edit data – edit graphic representations • demonstrate appropriate key commands and functions to link database files to one or more databases.	Command key/mouse: – manual – reference texts – help.
Manipulating Data and Preparing Reports	• access data and define problems (e.g., manage information, make decisions) • plan and design database files to solve problems: – identify fields (location, name and size) • input and process data.: – create template file – enter data into files – update and edit data in files • link one or more databases • merge a database with other documents • query a database to find: – selected records that meet several conditions – selected records that do not match a specific condition – use mathematical operators/functions to query – use wildcards in a query – use dates in a query	Topic ideas: – community data – libraries – agricultural inventories – business inventories – help features – flexibility – user friendly – response time.

MODULE INF2070: DATABASE 2 (continued)

Concept	Specific Learner Expectations	Notes
Manipulating Data and Preparing Reports (continued)	*The student should:* • output reports: – save files – manipulate data – preview records – print records • demonstrate appropriate format specifications and layout to create appropriate reports • analyze data to draw conclusions and make recommendations • cite references of data where appropriate.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2080: SPREADSHEET 2

Level: Intermediate

Theme: Productivity Software

Prerequisite: INF1060 Spreadsheet 1

Module Description: Students demonstrate advanced level spreadsheet commands and functions to calculate and manipulate data and to prepare appropriate reports and printouts in text and graphic format.

Module Parameters: Computer workstation, disk, spreadsheet software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate advanced level electronic spreadsheet software competence, by: – creating spreadsheets, including importing data	• creating spreadsheets to solve problems using more advanced spreadsheet software functions: – define problems (e.g., manage information, make decisions) – plan, design and create spreadsheets to solve problems – enter data onto spreadsheets – preview/print spreadsheets – use appropriate software commands and functions to create spreadsheets, enter data and print. *Assessment Tool* *Assessment Checklist: Spreadsheets (INFSS)* *Standard* *Rating of 2 in the creation of error-free, well-designed spreadsheets*	40
– manipulating data and preparing charts	• manipulating data in spreadsheets to visually present data in chart graph format: – select data from spreadsheet to present in graphic format – select appropriate chart graph to present data – plan and present data visually through the creation of chart graphs – use appropriate software commands and functions to create visually pleasing detailed graphs – analyze data to draw conclusions and recommendations – print reports (portrait and landscape). *Assessment Tool* *Assessment Checklist: Spreadsheets (INFSS)* *Standard* *Rating of 2 in the creation of error-free, well-designed spreadsheets*	50

MODULE INF2080: SPREADSHEET 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **apply, consistently, appropriate workstation routines**	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• **demonstrate basic competencies.**	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Basic Software Commands and Functions	• describe key features of the spreadsheet software package: – capabilities – system requirements – platform options – command structure • use help functions and references as appropriate • demonstrate improvement in the use of previously learned software functions • move through document(s) efficiently by using appropriate cursor movement tools/commands.	

MODULE INF2080: SPREADSHEET 2 (continued)

Concept	Specific Learner Expectations	Notes
Advanced Software Commands and Functions	*The student should:* • demonstrate appropriate key commands to produce spreadsheets that emphasize the ability to predict/forecast using "what-if" scenarios • demonstrate appropriate key commands to import data • demonstrate appropriate key commands to merge data with other documents • incorporate macros to: – edit data – copy/cut/paste – sort – move data and formats – copy data and formats – clear cells, rows and columns – replace cells, rows and columns • use template feature • enhance and modify chart graphs by: – changing marker shapes on line graphs – exploding a pie chart – mixing a line and bar graph – merging with another document.	Identify application(s). Collect/organize information/resources. Design alternative formats/structures. Plan/execute activities. Critique results. Compare the effectiveness of various spreadsheet designs. Calculate/recalculate.
Document Production	• access data and define problems (manage information and make decisions) • plan and design spreadsheets to solve problems: – identify columns and rows (location, name, size) – incorporate the ability of the spreadsheet to predict/forecast using "what if" scenarios • input and process data: – create worksheet template – enter data into spreadsheet – update and edit data on worksheet • output data – print worksheets in alternate formats (portrait and landscape) – create visual presentations of data through chart graphs: • select data from spreadsheets to present in graphic format	Incorporate "what-if" possibilities for: – travel expenses – problem-solving applications – election predictions, design/cost decision – feed analysis.

MODULE INF2080: SPREADSHEET 2 (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	*The student should:* • select appropriate chart graphs • plan and present data in chart graphs • analyze data to draw conclusions and recommendations • print chart graphs in alternative formats • cite references of data where appropriate.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2090: CORRESPONDENCE

Level: Intermediate

Theme: Applied Processing

Prerequisites: INF2030 Keyboarding 2
INF2050 Word Processing 2

Module Description: Students expand their rate of document production as they prepare various forms of correspondence in mailable form, using word processing software.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate efficient word processing of correspondence through the production of: – mailable correspondence in a variety of formats under time constraints	*Assessment of student achievement should be based on:* • a collection of produced correspondence consisting of: – preparation of mailable correspondence under time constraints appropriate for complexity of task, based on unformatted sources – a minimum expected keyboarding competency of 30 wpm based on Keyboarding 2 competency – designing and creating of templates, macros, and/or autotext for a variety of correspondence – production of letters in a variety of styles from unformatted sources including all basic letter parts plus: • mailing and special notations • attention and subject lines • displayed information • enclosure and copy notations • second page headings – merging letters with multiple records – production of memoranda from unformatted sources – production of a set of labels and envelopes – print and/or e-mail correspondence. *Assessment Tool* *Assessment Checklist: Correspondence, Reports, Tables (INFCRT)* *Standard* *Rating of 2, error-free and well-formatted correspondence, under time constraints appropriate for complexity of task*	70

BEST COPY AVAILABLE

MODULE INF2090: CORRESPONDENCE (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
– error-free, well-formatted correspondence	• editing of existing documents to produce error-free, well-formatted correspondence. *Assessment Tools* *Assessment Checklist: Correspondence, Reports, Tables (INFCRT)* *Standard* *Rating of 2, error-free and well-formatted, documents*	20
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Document Creation	• demonstrate efficient and accurate keystroking and software commands used to open and name files and to produce mailable documents • enter text from **formatted** copy in which text is: – error free – draft, edited – unedited	Types of correspondence: • letters: – one page – multipage • memorandums • facsimile cover sheets • envelopes/labels.

MODULE INF2090: CORRESPONDENCE (continued)

Concept	Specific Learner Expectations	Notes
Document Creation (continued)	*The student should:* • plan layout and enter text from **unformatted** copy in which text is: – error free – draft, edited – unedited.	Styles • informal • formal.
Document Manipulation and Editing	• demonstrate appropriate key commands to: – edit and manipulate text – replicate, convert and append files – prepare templates, macros and autotext – paginate documents • move through document(s) efficiently by using appropriate cursor movement tools/commands • use help functions and references as appropriate • proofread documents for additional accuracy and formatting.	Use software-based editing tools such as spell check, thesaurus, grammar check, cut, copy and paste.
Document Production	• describe the purpose of the correspondence: – target audience – internal/external – single/multiple copy • demonstrate appropriate key commands to produce and edit mailable letters and memoranda, including the following features: – designing and creating templates, macros and/or autotext for a variety of correspondence – letter parts (date, inside/return addresses, salutations, complimentary closing, name/title, references) – letter styles – punctuation styles – placement – letterhead – mailing notations – address (labels, envelopes) – second page headings – display paragraphs (e.g., enumerations) – form letters/mail merge • demonstrate appropriate key commands to print and save documents using alternative formats • use e-mail to send letters and memos to teacher.	All documents should be in mailable form: • no errors • well formatted. Design letterheads, form letters, closings, memo templates.

MODULE INF2090: CORRESPONDENCE (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply correct workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology accurately to describe basic processes, procedures and tools.	

MODULE INF2100: **REPORTS**

Level: Intermediate

Theme: Applied Processing

Prerequisites: INF2030 Keyboarding 2
INF2050 Word Processing 2

Module Description: Students expand their rate of production as they prepare various reports and manuscripts in mailable form.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate efficient word processing of reports/manuscripts through the production of: – mailable reports in a variety of formats under time constraints	*Assessment of student achievement should be based on:* • a collection of produced reports consisting of: – preparation of mailable reports/manuscripts under time constraints appropriate for complexity of task, based on unformatted sources – a minimum expected keyboarding competency of 30 wpm based on Keyboarding 2 competency – designing and creating of templates, macros, and/or autotext for a variety of reports – production of reports from unformatted sources including the following features: • title pages • title/headings/subheadings/side headings • table of contents • outlines • display paragraphs/quotes • multicolumn • charts and/or tables • headers/footers • page numbering • citations (footnotes, endnotes, within body) • reference lists and/or bibliographies • appendices • indexes – print and/or e-mail reports. *Assessment Tools* *Assessment Checklist: Correspondence, Reports, Tables (INFCRT)* *Standard* *Rating of 2, error-free and well-formatted reports, under time constraints appropriate for complexity of task*	70

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
– error-free, well-formatted reports	• editing of existing documents to produce error-free, well-formatted reports. *Assessment Tool* *Assessment Checklist: Correspondence (INFCRT)* *Standard* *Rating of 2, error-free and well-formatted reports*	20
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Document Creation	• demonstrate efficient and accurate keystroking and software commands used to open and name files and to produce mailable documents • enter text from **formatted** copy in which text is: – error free – draft, edited – unedited • plan layout and enter text from **unformatted** copy in which text is: – error free – draft, edited – unedited.	

MODULE INF2100: REPORTS (continued)

Concept	Specific Learner Expectations	Notes
Document Manipulation and Editing	*The student should:* • demonstrate appropriate key commands to: – edit and manipulate text – replicate, convert and append files – prepare templates, macros and autotext – paginate documents • move through document(s) efficiently by using appropriate cursor movement tools/commands • use help functions and references as appropriate • proofread documents for additional accuracy and formatting.	Use software-based editing tools such as spell check, thesaurus, grammar check, cut, copy and paste.
Document Production	• describe the purpose of the report: – target audience – internal/external – single/multiple copy • demonstrate appropriate key commands to produce mailable reports, including the following features: – title page – titles/headings/subheadings – table of contents – outlines – bound/unbound formats – columns – display paragraphs/quotes – headers/footers – citations (footnotes, reference list, bibliography) – appendices/indexes • demonstrate appropriate key commands to print and save documents using alternative formats. • use electronic mail to send reports to teacher.	All documents should be in mailable form: no errors, well formatted. Commonly used styles: APA (American Psychological Association) or MLA (Modern Language Association).

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2110: TABLES/FORMS

Level: Intermediate

Theme: Applied Processing

Prerequisites: INF2030 Keyboarding 2
INF2050 Word Processing 2

Module Description: Students expand their rate of document production as they prepare various tables/forms in mailable form.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate competence in word processing of tables/forms, by: – producing mailable tables in a variety of formats under time constraints	*Assessment of student achievement should be based on:* • a collection of produced tables consisting of: – preparation of mailable tables under time constraints appropriate for complexity of task based on unformatted sources – a minimum expected keyboarding competency of 30 wpm based on Keyboarding 2 competency – designing and creating of templates, macros, and/or autotext for a variety of tables – production of tables from unformatted sources including the following features: • headings and subheadings (multiline) • borders/shading • cell appearances (e.g., fonts, alignment) • math calculations • supplemental data (e.g., footnotes) • dot leaders • table sorts – print and/or e-mail tables. *Assessment Tools:* *Assessment Checklist: Correspondence, Reports, Tables (INFCRT)* *Standard* *Rating of 2, error-free and well-formatted tables/forms, under time constraints appropriate for complexity of task*	40

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
– designing a mailable form for a specific purpose and audience	• a collection of produced forms consisting of: – preparation of mailable forms under time constraints appropriate for complexity of task based on unformatted sources – a minimum expected keyboarding competency of 30 wpm based on Keyboarding 2 competency – design, create and use templates for a variety of business forms such as: • invoices/credit memos • purchase requisitions/orders • statements of account • employee applications • fax cover sheets – print and/or e-mail forms. *Assessment Tools* *Assessment Checklist: Correspondence, Reports, Tables (INFCRT)* *Standard* *Rating of 2, error-free and well-formatted forms, under time constraints appropriate for complexity of task*	30
– editing and formatting tables and forms	• editing of existing documents to produce error-free, well-formatted reports. *Assessment Tool* *Assessment Checklist: Correspondence, Reports, Tables (INFCRT)* *Standard* *Rating of 2, error-free and well-formatted reports*	20
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10

MODULE INF2110: TABLES/FORMS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic competencies.	*Assessment of student achievement should be based on:* • observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
Document Creation	*The student should:* • demonstrate efficient and accurate keystroking and software commands used to open and name files and to produce mailable documents • enter text from **formatted** copy in which text is: – error free – draft, edited – unedited • plan layout and enter text from **unformatted** copy in which text is: – error free – draft, edited – unedited.	
Document Manipulation and Editing	• demonstrate appropriate key commands to: – edit and manipulate text – replicate, convert and append files – prepare templates, macros and autotext – paginate documents • move through document(s) efficiently by using appropriate cursor movement tools/commands • use help functions and references as appropriate • proofread documents for additional accuracy and formatting	Use software-based editing tools such as spell check, thesaurus, grammar check, cut, copy and paste.

Concept	Specific Learner Expectations	Notes
Document Production	*The student should:* • describe the purpose of the table/form: – target audience – internal/external – single/multiple copy • demonstrate appropriate key commands to produce mailable single and multicolumn tables, including the following features: – headings, subheadings (multiline) – borders/shading – cell attributes (fonts, justification) – special options (sort, split/join cells) – rulers/tabs – supplemental data (e.g., footnotes) – parallel columns – merged table (display paragraphs) – math calculations – dot leaders – table sorts • plan/create templates for commonly used forms (purchase order, statement, etc.) • demonstrate appropriate key commands to enter data and produce mailable forms, including the following examples: – interoffice memorandums – facsimile cover sheets – invoices – purchase orders – credit memos – application for employment – account statements • demonstrate appropriate key commands to print and save documents using alternative formats. • use electronic mail to send tables and forms to teacher.	All document should be in mailable form: • no errors • well formatted.

MODULE INF2110: TABLES/FORMS (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2120: **SOFTWARE INTEGRATION 1**

Level: Intermediate

Theme: Applied Processing

Prerequisites:
INF1030 Word Processing 1
INF1050 Database 1
INF1060 Spreadsheet 1

Module Description: Students develop document production skills requiring the integration of data, text and graphics.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Supporting Modules:
INF1020 Keyboarding 1
INF1040 Graphic Tools

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **demonstrate word processing and data management systems/ graphics software integration competence, by:** – **producing mailable word processing documents that integrate spreadsheet, database and/or graphics in a variety of specific applications**	• create two- to three-page document(s) (enter, format, edit and print) from unedited, unformatted sources that integrate data, text, and graphics. Documents should make use of two of the following types of software: – word processing – spreadsheet – database – graphics (paint and draw, clip art files)	60
	• editing of documents created to produce error-free, well-formatted document(s). *Assessment Tool* *Assessment Checklist: Software Integration 1, 2 and 3 (INFINTEG)* *Standard:* *Rating of 1 in the production of accurate and well-formatted documents*	30
• **apply, consistently, appropriate workstation routines**	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10

MODULE INF2120: SOFTWARE INTEGRATION 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic competencies.	*Assessment of student achievement should be based on:* • observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
Document Production	*The student should:* • follow instructions to customize/personalize existing text and data files • load, redesign/reformat, modify existing templates/files containing information from database, spreadsheet, graphics files • apply word processing, database, spreadsheet and graphics commands as appropriate to import and merge documents into word processing files • manipulate word processing, database, spreadsheet, graphics software to produce mailable documents from drafts: – edited, formatted – edited, unformatted – unedited, unformatted.	
Document Editing	• format/revise documents to be aesthetically pleasing and well formatted • describe the purpose of the document: – target audience – single/multiple/presentation copy • print and save documents.	

MODULE INF2120: SOFTWARE INTEGRATION 1 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2130: MULTIMEDIA AUTHORING 1

Level: Intermediate

Theme: Productivity Software

Prerequisite: INF1070 Hypermedia Tools

Module Description: Students are introduced to multimedia software and provided with an opportunity to develop basic authoring competence, by accessing and integrating software resident text, video and audio clips.

Module Parameters: Computer workstation, software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate multimedia authoring competence, by using software resident text, video and audio clips to:	• planning, producing, editing and testing of a one-minute multimedia presentation that includes text, video and audio with individual components supporting a common theme:	20
– use software-specific commands to access and manipulate text video and audio – develop a multimedia presentation	– identify, import and modify textual material – identify, import and modify graphics – identify, import and modify video clips – identify, import and modify audio clips – identify, import and modify animation clips.	70
	Assessment Tool *Assessment Checklist: Multimedia Software Functions (INFMMSF)* *Assessment Checklist: Multimedia Productions and Presentations (INFMMDOC)*	
	Standard *Rating of 2*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines.	10
	Assessment Tool *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)*	
	Standard *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	

BEST COPY AVAILABLE

MODULE INF2130: MULTIMEDIA AUTHORING 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic competencies.	*Assessment of student achievement should be based on:* • observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
Multimedia Authoring Software Skills	*The student should:* • demonstrate ability to use identified multimedia software in the planning of a presentation that includes the importing and modification of: – text – graphics – video – sound – animation • identify, locate and access resident text, video, graphics, audio and animation files • identify and select software commands for predetermined purpose (e.g., image creation, sequencing, timing rates).	
Multimedia Authoring Presentation	• follow planning steps in preparing a multimedia presentation • prepare a storyboard, outlining the presentations content and special effects for a particular theme • make decisions regarding text, sound, graphics, video and animation • select and use appropriate tools, commands and devises • apply software commands	Create presentations for other courses such as English, science, art, and Management and Marketing.

MODULE INF2130: MULTIMEDIA AUTHORING 1 (continued)

Concept	Specific Learner Expectations	Notes
Multimedia Authoring Presentation (continued)	*The student should:* • create/save multimedia authored file • key/import, customize/modify text, video, audio, animation source clips • establish window arrangements (characteristic, parameters) • follow accepted principles of layout and design • address the following clip considerations: – name, type, frame size, duration, sound quality • edit the sequence (text, video, audio tracks) • edit construction window, clip window • preview segments, tracks, sequence • display output, run project sequence • print/export file(s).	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2140: PROCESS CONTROL

Level: Intermediate

Theme: Dynamic Environment

Prerequisites: INF1010 Computer Operations

Module Description: Students develop skills in robotics/simulation software control by creating, modifying and using programs that incorporate computer-controlled movements and events in robotics/simulation activities and applications.

Module Parameters: Computer workstation, software, support resources.

Supporting Module: INF1070 Hypermedia Tools

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic electronic process control software competence, by: – explaining the theory and processes used to control a robot and/or other simulation	*Assessment of student achievement should be based on:* • a presentation (oral, written or visual) explaining basic mechanics and principles of robotics and robotic control: – describe the types of tasks robots perform – explain how robotics are affecting society now and in the future – diagram a basic robot, labelling components including the controller – describe the functions of labelled components – explain the processes used to control robots – give an example of when it would be feasible to use a robot over a human to perform a task – give an example of when it would be feasible to use a human over a robot to perform a task. *Assessment Tool* *Assessment Guide: Process Control Project (INF2140–1)* *Process Control Sample Project (INFPCSAM)* *Standard* *Rating of 2 in each applicable task*	25
– constructing a robot or cause a robot to function as intended through computer control	• programming a robot: assemble and program a robot to perform a specific task: – describe the task the robot will perform – follow a blueprint design – program the robot	50

MODULE INF2140: PROCESS CONTROL (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:* – assess the design capabilities of the completed robot – test the functionality of the robot to perform task – correct any flaws	
	• demonstrate robot functionality. – describe the purpose of the robot – demonstrate the use of robot to perform task – explain how the interrupts are used to control the robot. *Assessment Tool* *Assessment Guide: Process Control Project (INF2140–1)* *Process Control Sample Project (INFPCSAM)* *Standard* *Rating of 2 in each applicable task*	15
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF2140: PROCESS CONTROL (continued)

Concept	Specific Learner Expectations	Notes
Robotic Theory	*The student should:* • describe the types of tasks robots perform • explain how robotics are affecting society now and in the future • diagram a basic robot, labelling components including the controller • describe the functions of labelled components • explain the processes used to control robots • give examples of the types of software used to instruct the controller • give an example of when it would be feasible to use a robot over a human to perform a task • give an example of when it would be feasible to use a human over a robot to perform a task.	
Computer Operations Skills	• identify, access and use teacher-specified process control software • use commands and functions to control robot(s) in teacher-specified exercises.	
Robotics/Simulation Project	• design and implement a robotics and/or other computer simulation by following a procedure such as: – identify software/application(s) – determine/design algorithm parameters – collect required support resources – input data – apply animation/robotics software commands – load/create/customize/modify robotics/simulation files(s) • demonstrate animation/robotic capability • display/print/export – animation/robotics file.	

MODULE INF2140: PROCESS CONTROL (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2150: PROGRAMMING 2

Level: Intermediate

Theme: Programming

Prerequisite: INF1080 Programming 1

Module Description: Students increase their programming skills, by designing and generating programming code to handle decision making and repetitive processes.

Module Parameters: Access to appropriate computer equipment and software.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate basic computer programming skill, by: – creating algorithms to solve problems involving decision making and iteration	• developing programs that (using either procedure or object-oriented programming) demonstrate the efficient use of algorithms and language syntax. Demonstrate the ability to: – distinguish conditions within problems that require decision-making and repetitive calculations/ operations – examine and create problems in which decision-making conditions exist – examine the repetitive pattern that exists in the problem and distinguish between pretest and post-test iterative structures and predetermined iterative conditions – examine and create problems that define a predetermined number of repetitions – examine and create problems requiring precheck/post-check iterative structures.	45
– constructing computer programs involving decision making and iterative processes	– construct commands that will increment and decrement variable values based on patterns recognized in the problem – differentiate and apply language-specific reserved words for predefined, precheck and post-check iterative operations – differentiate and apply language-reserved words for decision-making structures – differentiate and apply language-specific relational/logic operators in decision-making and iterative structures. *Assessment Tool* *Assessment Checklist: Introductory and Intermediate Programming (INFPRGM1)* *Programming: Sample Assignment 2A*	45

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:* *Standard* *Rating of 2 in the creation and presentation of programs*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Part A: Procedure-oriented Programming

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms	• identify/describe the problem • list each step required to solve the problem • demonstrate the appropriate logic to achieve the solution • apply structured programming constructs to create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.

MODULE INF2150: PROGRAMMING 2 (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	*The student should:* • use constants, variables, data structures, operands • use reserved words, commands, statements, operators • input data using reserved words: – embedded/read/enter data • process data: – calculations/manipulations/decision control/branching/looping • output data using reserved words: – text/data/graphics.	
Structured Computer Programming Applications	• access appropriate computer language resource support	
	• research decision-making processes and conditions when used	Decision control (conditional statements).
	• apply programming syntax to decision-making processes	Branching. Looping.
	• code simple decision-making commands involving a variety of conditions	
	• discuss and use nested conditional statements	
	• research iterative structures and conditions when used	
	• apply programming syntax to iterative processes	Repetition. Iteration. Looping.
	• code simple repetitive commands involving a variety of conditions, including nested repetitive structures	Counting, specific conditions, incrementing, summation, Boolean relational operators
	• describe appropriate use of unconditional branching	
	• identify problem/develop algorithm	
	• design output format	
	• key/code the instructions	
	• test run program	

MODULE INF2150: PROGRAMMING 2 (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications (continued)	*The student should:* • debug/edit program • execute program • document program • assess activities/results.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	*The student should:* • identify/describe the problem • list each step required to solve the problem • demonstrate the appropriate logic to achieve the solution • apply structured programming constructs to create a schematic/flowchart pseudocode indicating how the solution will be achieved (IPO/HIPO).	
Computer Language Syntax	• use constants, variables, data structures, operands • use reserved words, commands, statements, operators or predefined classes • input data using reserved words or predefined classes • process data • output data using reserved words or predefined classes.	Embedded/read/enter data. Calculations/ manipulations/decision control/ branching/ looping. Text/data/graphics.
Structured Computer Programming Applications	• access appropriate computer language resource support • research decision-making processes and conditions when used • apply programming syntax to decision-making processes • code simple decision-making commands involving a variety of conditions • describe and use nested conditional statements • research iterative structures and conditions when used	Decision control (conditional statements). Branching. Looping.

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications (continued)	*The student should:* • apply programming syntax to iterative processes • code simple repetitive commands involving a variety of conditions, including nested repetitive structures • describe appropriate use of unconditional branching • identify problem/develop algorithm • design output format • key/code the instructions • test run program • debug/edit program • execute program • document program • assess activities/results.	Repetition. Iteration. Looping. Counting, specific conditions, incrementing, summation, Boolean relational operators.
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2160: PROGRAMMING 3

Level: Intermediate

Theme: Programming

Prerequisite: INF2150 Programming 2

Module Description: Students increase their programming skills, by using subprogram structures.

Module Parameters: Access to appropriate computer equipment and software.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • restructure existing computer programs, by: – using subprogram structures – revising and constructing computer programs involving subprogram structures	*Assessment of student achievement should be based on:* • developing programs (using either procedure or object-oriented programming) which demonstrate efficient use of algorithms and language syntax Demonstrate the ability to: – assess components of problems which may be isolated in separate subprograms – distinguish between criteria for selection of appropriate subprogram structures – distinguish between local and global variables	30
• modify the algorithm to isolate the component operations/processes that were incorporated into the subprogram structure	– revise and construct programs that use local and global variables – revise and construct programs that use language-specific subprogram structures based on parameters to be passed – revise and construct programs that use language-specific subprogram structures involving one- and two-way parameter passing – revise and construct programs using nested subprogramming structures. *Assessment Tool* *Assessment Checklist: Introductory and Intermediate Programming (INFPRGM1)* *Programming: Sample Assignment 3A* *Standard* *Rating of 2 in the creation and presentation of programs*	60

MODULE INF2160: PROGRAMMING 3 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Part A: Procedure-oriented Programming

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms	• modify an existing algorithm(s) • identify/describe the problem • list each step required to solve the problem • demonstrate the appropriate logic to achieve the solution • apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.

MODULE INF2160: PROGRAMMING 3 (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	*The student should:* • use constants, variables, data structures, operands • use reserved words, commands, statements, operators, subroutines, predefined and user-defined functions • input data using reserved words: – embed/read/enter data • process data: – calculations/manipulations/decision control/branching/looping/subroutines/functions • edit/modify existing code • output/link program segments/program using reserved words: – text/data/graphics.	
Structured Computer Program Applications	• access appropriate computer language resource support • research precoded instructions used as templates: – why are they used – when used • code simple instructions to use templates/ library routines • recode existing programs treating text/graphics as subprograms • describe use of procedures/subroutines/functions • describe purpose/use of subprograms/predefined functions • use subroutines/functions in program segments • access/create program segments using complex procedures/functions: – use parameters/operators to customize repeating code patterns – one- and two-way parameter passing – nested procedures/functions – scope charts – local/global variables	Reduces coding/ debugging Under what conditions? Repeating patterns of code.

Concept	Specific Learner Expectations	Notes
Structured Computer Program Applications (continued)	*The student should:* • apply subroutines/functions in a program • produce algorithm • design output format • key/code the instructions • test run program • debug/edit program • execute program • document program • assess activities/results.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms/Classes	• modify an existing algorithm(s) • identify/describe the problem • list each step required to solve the problem • demonstrate the appropriate logic to achieve the solution • apply structured programming constructs to modify/create a schematic/flowchart/ pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.
Computer Language Syntax	• use constants, variables, data structures, operands • use reserved words, commands, statements, operators, subroutines, predefined and user-defined functions • input data using reserved words: – embedded/read/enter data • process data: – calculations/manipulations/decision control/branching/looping/subroutines/ functions • edit/modify existing code • output/link program segments/program using reserved words: – text/data/graphics.	
Structured Computer Program Applications	• access appropriate computer language resource support • research precoded instructions used as templates: – why are they used – when used • code simple instructions to utilize templates/ library routines/library classes • recode existing programs treating text/graphics as subprograms	Reduces coding/ debugging Under what conditions?

Concept	Specific Learner Expectations	Notes
Structured Computer Program Applications (continued)	*The student should:* • describe use of procedures/subroutines/functions • describe purpose/use of subprograms/predefined functions • use subroutines/functions in program segments • access/create program segments using complex procedures/functions: – use parameters/operators to customize repeating code patterns – one- and two-way parameter passing – nested procedures/functions – scope charts – local/global variables • apply subroutines/functions in a program • develop algorithm • produce output format • key/code the instructions • test run program • debug/edit program • execute program • document program • assess activities/results.	Repeating patterns of code.

MODULE INF2160: PROGRAMMING 3 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2170: **PROGRAMMING 4**

Level: Intermediate

Theme: Programming

Prerequisite: INF2160 Programming 3

Module Description: Students increase their programming skills, by developing and using derived data types.

Module Parameters: Access to appropriate computer equipment and software.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate evolving computer programming skill, by: – creating algorithms to solve problems supporting derived data types such as arrays, character strings, records, sets	*Assessment of student achievement should be based on:* • developing programs (using either procedure- or object-oriented programming) which demonstrate efficient use of algorithms and language syntax. Demonstrate the ability to: – categorize problems requiring the use of derived data types – distinguish characteristics of differing derived data types – construct appropriate derived data types based upon problem parameters	30
– creating structured programs using derived data types	– create programs using predefined language-specific subprograms to perform operations or derived data type. *Assessment Tool* *Assessment Checklist: Intermediate Programming (INFPRGM2)* *Programming: Sample Assignment 4A (Procedure-oriented) or 4B (Object-oriented)* *Standard* *Rating of 2 in the creation and presentation of programs*	60

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **apply, consistently, appropriate workstation routines**	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• **demonstrate basic competencies.**	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Part A: Procedure-oriented Programming

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms	• modify an existing algorithm(s) • identify/describe the problem • list each step required to solve the problem/list the required components of the data structure • demonstrate the appropriate logic to achieve the solution • apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.

MODULE INF2170: PROGRAMMING 4 (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	*The student should:* • use constants, variables, data structures, operands • use reserved words, commands, statements, operators, subroutines, functions • use single- and multiple-dimensioned arrays, character strings, records and sets • input data using reserved words: – embed/read/enter data – create/assign values to derived data types • process data: – calculations/manipulations/decision control/ branching/looping/subroutines/functions • edit/modify existing code • output/link programs or segments of programs using reserved words: – text/data/graphics.	
Structured Computer Programming Applications	• access appropriate computer language resource support • describe purpose/use of derived data types • describe the need for/advantages of derived data types • use derived data types in program segments • access/create program segments using derived data types: – single/multiple-dimensioned arrays – character strings – records/sets • create program segments that access data stored in derived data types • create program segments that use predefined functions/procedures to process information stored in derived data types • apply derived types in a program • produce algorithm • design output format • key/code the instructions	Programmers generally do not develop software in isolation but as part of a team of programmers. It is appropriate to introduce the concept of team design work. A group of students can be given a problem where parts of the problem are coded by different students on the team and then they place it together to make a working program.

Concept	Specific Learner Expectations	Notes
Structured Computer Programming Applications (continued)	*The student should:* • test run program • debug/edit program • execute program • document program • assess activities/results.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2170: PROGRAMMING 4 (continued)

Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	*The student should:* • modify an existing algorithm(s) • identify/describe the problem • list each step required to solve the problem/list the required components of the data structure • demonstrate the appropriate logic/data components to achieve the solution • apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	
Computer Language Syntax	• use constants, variables, data structures, operands • use reserved words, commands, statements, operators, subroutines, functions • use single- and multiple-dimensioned arrays, character strings, records/sets/structures/ pointers/classes • input data using reserved words: – embed/read/enter data – create/assign values/operations to derived data types • process data: – calculations/manipulations/decision control/ branching/looping – subroutines/functions/classes/objects • edit/modify existing code • output/link programs or segments of programs using reserved words or predefined classes: – text/data/graphics.	
Structured Computer Programming	• access appropriate computer language resource support • describe purpose/use of derived data types • describe the need for/advantages of derived data types • use derived data types in program segments	

Concept	Specific Learner Expectations	Notes
Structured Computer Programming (continued)	*The student should:* • access/create program segments using derived data types: – single/multiple-dimensioned arrays – character strings – records/sets/structures/pointers/classes • create program segments that access data/ members of derived data types • create program segments that use predefined functions/procedures and user-defined functions/procedures to process information stored in derived data types • apply derived types in a program • produce algorithm/classes • produce output format • key/code the instructions • test run program • debug/edit program • execute program • document program • assess activities/results.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools. •	

MODULE INF2180: PROGRAMMING 5

Level: Intermediate

Theme: Programming

Prerequisite: INF2170 Programming 4

Module Description: Students increase their programming skills, by developing and using recursive, sorting and merging algorithms.

Module Parameters: Access to appropriate computer equipment and software.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate evolving computer programming skills, by: – examining/creating different recursive, sorting, searching and merging algorithms	• developing programs (using either procedure- or object-oriented programming) which demonstrate efficient use of algorithms and language syntax. Demonstrate the ability to: – examine/create problems requiring sorting, searching and merging algorithms – examine/create problems requiring recursive algorithms – identify the merits (efficiencies) of different sorting, searching and merging algorithms	30
– revising/creating structured programs containing operations on derived data types	– create and revise programs using standard sort routines (bubble sort, quick sort, insertion sort, selection sort, etc.) – create and revise programs to search sorted and unsorted data (linear and binary searches) – create and revise programs to merge sorted data – create and revise programs to use iterative and recursive routines. *Assessment Tools* *Assessment Checklist: Intermediate Programming (INFPRGM2)* *Programming: Sample Assignment 4A (Procedure-oriented) or 4B (Object-oriented)* *Standard* *Rating of 2 in the creation and presentation of programs*	60

BEST COPY AVAILABLE

MODULE INF2180: PROGRAMMING 5 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **apply, consistently, appropriate workstation routines**	• demonstrating appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Part A: Procedure-oriented Programming

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms	• modify existing/develop new algorithms • identify/describe the problem • list each step required to solve the problem/list the required components of the data structure • demonstrate the appropriate logic/data components required to achieve the solution • demonstrate the appropriate methods of accessing data in derived data types • compare iterative and recursive routines • measure the efficiency of comparable routines • apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.

MODULE INF2180: PROGRAMMING 5 (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax	*The student should:* • use constants, variables, data structures, operands • use reserved words, commands, statements, operators, subroutines, functions • use language-specific derived data types • input data using reserved words: – embed/read/enter data – create/assign values to derived data types • process data: – calculations/manipulations/decision control/ branching/looping/subroutines/functions • edit/modify/existing code • output/link program segments/programs using reserved words: – text/data/graphics.	
Structured Computer Programming Applications	• access appropriate computer language resource support • describe purpose/use of derived data types • describe the need for/advantages of derived data types • use derived data types in program segments • use/develop/modify iterative and recursive routines to sort/search/merge members of derived data types • identify situations that lend themselves to specific routines • apply appropriate operations on derived data types in a program • produce algorithm • produce output format • key/code the instructions • test run program • debug/edit program • execute program • document program • assess activities/results.	Programmers generally do not develop software in isolation but as part of a team of programmers. It is appropriate to introduce the concept of team design work. A group of students can be given a problem where parts of the problem are coded by different students on the team and then they place it together to make a working program.

MODULE INF2180: PROGRAMMING 5 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

Part B: Object-oriented Programming

Concept	Specific Learner Expectations	Notes
Algorithms/Classes	*The student should:* • modify existing/develop new algorithms/classes • identify/describe the problem • list each step required to solve the problem/list the required components of the data structure • demonstrate the appropriate logic/data components required to achieve the solution • demonstrate the appropriate methods of accessing data/methods in derived data types • compare iterative and recursive routines/structures • measure the efficiency of comparable routines/structures	

Concept	Specific Learner Expectations	Notes
Algorithms/Classes (continued)	*The student should:* • apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	
Computer Language Syntax	• use constants, variables, data structures, operands • use reserved words, commands, statements, operators, subroutines, functions • use language-specific derived data types • input data using reserved words or predefined classes: – embed/read/enter data – create/assign values/operations to derived data types • process data: – calculations/manipulations/decision control/branching/looping/subroutines/ functions/classes/objects/methods • edit/modify existing code • output/link program segments/programs using reserved words or predefined classes: – test/data/graphics.	
Structured Computer Programming	• access appropriate computer language resource support • describe purpose/use of derived data types • describe the need for/advantages of derived data types • use derived data types in program segments • use/develop program segments that access elements of derived data types using member/ non-member functions • use/develop program segments that develop new classes from base classes/add new data/methods to base classes/redefine the way in which inherited class member functions operate/inherit characteristics from multiple classes	

MODULE INF2180: PROGRAMMING 5 (continued)

Concept	Specific Learner Expectations	Notes
Structured Computer Programming (continued)	*The student should:* • identify situations that lend themselves to specific routines/structures • apply appropriate operations on derived data types in a program • produce algorithm/classes • produce output format • key/code the instructions • test run program • debug/edit program • execute program • document program • assess activities/results.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2190: TELECOMMUNICATIONS 1

Level: Intermediate

Theme: System Operations

Prerequisite: INF1010 Computer Operations

Module Description: Students learn how to select and use various wired and wireless telecommunication systems. By using the Internet, they investigate how communication principles, bandwidth, telecommunication infrastructure and wave spectrum affects telecommunication systems.

Module Parameters: Computer workstation, utility software, access to the Internet, support resources.

Supporting Module: INF1090 Information Highway 1

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• use selected communication systems, protocols and techniques to transfer messages and manage research	• demonstrating effective and efficient use of at least two communication systems. *Assessment Tool* *Assessment Checklist: Telecommunication Systems Use (INF2190–1)* *Standard* *Rating of 2 for all applicable tasks*	20
• describe the principles of wired and wireless communication systems and how telecommunication systems are affected by bandwidth and wave spectrum	• a report or presentation that compares at least two wired and two wireless communication systems in terms of: – key components – type of information that can be transferred – bandwidth and typical users – comparative cost to install and use – stage of development (status).	40
	Assessment Tool *Assessment Checklist: Telecommunication Systems Presentation/Report (INF2190–2)* *Standard* *Rating of 2 in each applicable task*	20

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• compare and contrast key elements of a telecommunication infrastructure	• a report or presentation that compares two telecommunication systems in terms of the telecommunication infrastructures: – application/service provided – transmission system used – software – standards and protocols – personnel/expertise. *Assessment Tool* *Assessment Checklist: Telecommunication Infrastructure Presentation/Report (INF2190–3)* *Standard* *Rating of 2 in each applicable task*	30
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tool noted above*	Integrated throughout

MODULE INF2190: TELECOMMUNICATIONS 1 (continued)

Concept	Specific Learner Expectations	Notes
Evolution (Growth) of Telecommunications Systems	*The student should:* • outline basic elements of a communication system • describe the development of wired and wireless communications systems • identify key components of wired and wireless telecommunication systems • identify examples of how telecommunication systems are merging and connecting to improve service to various client groups.	Input (sender), output (receiver), message, noise (filter).
Transmission Forms and Systems	• use the computer to send and receive various types of information/data: (e.g., voice, data, documents, visuals, multimedia) • identify and describe telecommunications transmission systems in terms of bandwidth and wave spectrum: – wired (e.g., twisted pair telephone cable, coaxial cable, special data cables, fibre optics) – wireless (radar/microwave, radio, satellite data links) – digital versus analog • describe various types of transmission systems: – type of information that can be transmitted (voice, pictures) – present installation base – user cost.	
Telecommunications Infrastructure	• identify key elements of an effective telecommunications infrastructure: – information and interactive applications/services (e.g. entertainment, education, cultural products, social services, business services) – transmission systems (e.g., links with/among homes, businesses, governments and institutions) – software applications (e.g., enable the operation of computers, manipulation of data, access to communications networks and their information)	

MODULE INF2190: TELECOMMUNICATIONS 1 (continued)

Concept	Specific Learner Expectations	Notes
Telecommunications Infrastructure (continued)	*The student should:* – standards and protocols that allow access to, or secure the contents of, information and networks – people/expertise needed to create the information, technology, equipment, peripherals, software and services, to provide the information, construct the facilities and to educate others on its use and benefits • evaluate one or more telecommunications initiatives in terms of the key elements of an information technology infrastructure within one or more of the following areas: – personal (personal networks, interests, learning) – electronic commerce (allows consumers/businesses to interact; e.g., 1–800 numbers, EDI [electronic data interchange] used for data exchange) – health care (remote diagnostics, patient information sharing, training) – research – education and training (distance learning/module delivery) – libraries (on-line) – government services (federal/provincial) – information services; e.g., information about government services, reports – technology-based process/procedures, filing income tax electronically, electronic submissions of contract bids/tendering, teleconferencing – law enforcement services; e.g., international/national sharing of criminal data, teleconferenced parole hearings – labour force development: e.g., flexible, readily upgradeable training programs – environmental monitoring.	

MODULE INF2190: TELECOMMUNICATIONS 1 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF2200: **INFORMATION HIGHWAY 2**

Level: Intermediate

Theme: Dynamic Environment

Prerequisite: INF1090 Information Highway 1

Module Description: Students learn how to produce a web page for the Internet.

Module Parameters: Access to computer workstation and the Internet.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• research characteristics of an effective web page	• researching and providing examples of effective web pages showing: – appropriateness to bandwidth available – a visually pleasing design – a suitably organized layout – appropriate links. *Assessment Tool* *Assessment Guide: Information Highway 2 – Researching/Evaluating Tool (INF2200–1)* *Standard* *Rating of 2 for all applicable tasks*	20
• design, create and present a web page	• designing, creating and presenting a web page(s) with a consistent theme ensuring that: – the page(s) should include text, graphics, links and anchors – use if made of accepted guidelines of layout and design. *Assessment Tool* *Assessment Guide: Information Highway 2 – Designing/Creating, Documentation/ Presentation (INF2200–1)* *Standard* *Rating of 2 for all applicable tasks*	50

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• enhance web page to improve features and functions	• presenting changes and describing reasons for change. *Assessment Tool* *Assessment Guide: Information Highway 2 – Enhancing, Documentation/Presentation INF2200–1* *Standard* *Rating of 2 for all applicable tasks*	20
• apply, consistently, appropriate workstation routines	• demonstration of appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTA)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observation of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Research and Evaluate	• identify acceptable guidelines for creating web pages • list sites that present guidelines for web pages • evaluate a variety of web pages for use of accepted guidelines and ease of use • access several of their effective sites • explain the effective elements of the site being viewed	Bookmarks.

Concept	Specific Learner Expectations	Notes
Research and Evaluate (continued)	*The student should:* • use a variety of search strategies to find effective sites • identify and organize resources • outline key purpose of web pages • identify key target audiences • describe and use bookmarks to organize research sources • access information on creating web pages.	E.g., Lycos, Excite, Web Crawler. Development Guide for www pages–http://www.cox.xmu.edu/workbench/wbstandards.htm. Additional programming skills can be developed using modules from the Programming theme.
Design and Creation	• design a home page layout that incorporates the design elements of an effective web page • create a web page(s) using appropriate development sources • present pages that include text, graphics, links and anchors • test (using available browser) and debug (using available text editor).	The page may also include sound, animation, 3D graphics, etc.
Documentation and Presentation	• properly cite all resources used • identify which areas of web page need monitoring/updating • present web page • provide a guide for new users of the web page.	
Enhancement	• evaluate the impact of the web page • identify potential layout improvements • enhance a newly created or existing web page by: – updating data – editing web page (e.g., text, graphics) – adding/modifying special feature(s) • explain reasons for the changes • present enhanced web page.	

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation positions and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies when using the Internet • use related terminology to describe basic protocols, processes and tools.	

MODULE CURRICULUM AND ASSESSMENT STANDARDS:

SECTION F: ADVANCED LEVEL

The following pages define the curriculum and assessment standards for the advanced level of Information Processing.

Advanced level modules demand a higher level of expertise and help prepare students for entry into the workplace or a related post-secondary program.

Module INF3010: Hardware/Software Analysis F.3
Module INF3020: Local Area Networks F.7
Module INF3030: Keyboarding 4 ..... F.13
Module INF3040: Keyboarding 5 ..... F.17
Module INF3050: Keyboarding 6 ..... F.21
Module INF3060: Word Processing 3 ..... F.25
Module INF3070: Electronic Publishing 2 ..... F.31
Module INF3080: Information Management Tools F.35
Module INF3090: Software Integration 3 ..... F.39
Module INF3100: Specialization 1 ..... F.43
Module INF3110: Specialization 2 ..... F.47
Module INF3120: Software Integration 2 ..... F.51
Module INF3130: Multimedia Authoring 2 ..... F.55
Module INF3140: Expert Systems F.59
Module INF3150: Programming Application 1 ..... F.63
Module INF3160: Programming Application 2 ..... F.67
Module INF3170: Programming Application 3 ..... F.71
Module INF3180: Telecommunications 2 ..... F.75
Module INF3190: Information Highway 3 ..... F.79
Module INF3200: Internet Services F.83

MODULE INF3010: HARDWARE/SOFTWARE ANALYSIS

Level:	Advanced
Theme:	Systems Operations
Prerequisite:	INF1010 Computer Operations
Module Description:	Students analyze, compare and evaluate hardware/software based on user requirements.
Module Parameters:	Access to two different computer systems, three task-specific software packages, supporting documentation.
Supporting Module:	INF2010 Workstation Operations

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• analyze and compare computer hardware and software systems	• an analysis and comparison of two different computer systems (internal components, peripheral devices). *Assessment Tool* *Presentation/Reports: Analysis – Hardware (INF3010–1)* *Standard* *Rating of 2 in each applicable task*	30
	• an analysis and comparison of three task-specific software packages on the basis of: – hardware/operating system requirements – user friendliness – training/learning effectiveness – instructional support – command/function parameters – screen/page characteristics – intended use/audience – intercompatibility with other software. *Assessment Tool* *Presentation/Reports: Analysis – Software (INF3010–1)* *Standard* *Rating of 2 in each applicable task*	30

MODULE INF3010: HARDWARE/SOFTWARE ANALYSIS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• prepare and present a report recommending hardware and software configurations that meet specified criteria	• a report that responds to an identified need to provide or upgrade a computer system. The report will provide recommendations and rationale for particular hardware/software components (recommendation and reasons) that address: – client needs – information base – implementation timelines – financial costs – workstation requirements – inservice training – support services – warranties – legal restrictions. *Assessment Tool* *Presentation/Reports: Recommending Hardware/ Software (INF3010–1)* *Standard* *Rating of 2 in each applicable task*	30
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

MODULE INF3010: HARDWARE/SOFTWARE ANALYSIS (continued)

Concept	Specific Learner Expectations	Notes
	The student should:	
Computer Hardware	• prepare a report that responds to an identified need to provide or upgrade a computer system. The report will provide recommendations and rationale for a particular hardware/software components (recommendation and reasons) that addresses: – client needs – information base – implementation timelines – financial costs – workstation requirements – inservice training – support services – warranties – legal restrictions.	
Computer Software	• assess and compare system software/firmware: – hardware specifications – operating system (icon/command, supervisor, etc.) – utility programs – language translators – compilers – interpreters • assess and compare application software (data, text, graphics): – application package, customized program – instructional/presentation focus – independent/integrated – windows – menus/icons – palettes/toolboxes – help screen • access support manuals/documentation/ resources: – follow instructions and explanations from help menus/software manuals, other resource support.	

MODULE INF3010: HARDWARE/SOFTWARE ANALYSIS (continued)

Concept	Specific Learner Expectations	Notes
Analysis Presentation	*The student should:* • identify computer user needs, timelines • research potential alternatives • identify sources of information • demonstrate "hands-on" experience to compare/ evaluate hardware/software compatibility with identified user needs • make/support recommendation: – use appropriate industry-standard format – acceptable content/description – appropriate terminology.	Define user purpose/ requirements. Field test: – input components – operating system – output components – other peripherals – software package(s). Presentation could involve: – demonstration – illustrated hard copy – multimedia – combination of above.
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3020: LOCAL AREA NETWORKS

Level: Advanced

Theme: Systems Operations

Prerequisite: INF1010 Computer Operations

Module Description: Students learn about local area network (LAN) computer systems, including hardware and peripheral configurations, interface protocols and data transmission characteristics.

Module Parameters: Access to LAN (hardware, software, support resources).

Supporting Module: INF2010 Workstation Operations

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate basic LAN competence, as:		
– a user/operator	• using the LAN – demonstrating ability to: – login, logout, use of password (if necessary) – access information and programs on a LAN – download/upload files or data on a LAN – organize information on a LAN (e.g., directories, naming of files etc.).	10
	• a report or presentation on how networks works including: – LAN's purpose/capabilities – network topologies – hardware/software configurations for LANs.	20
	Assessment Tool *Assessment Guide: Local Area Networks Project – Using the Network and How Networks Work (INF3020–1)*	
	Standard *Rating of 2 in each applicable task*	

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
– a manager/technician	• installation and troubleshooting of hardware/software on a network system. – install hardware and software – set up users, security rights, and map software – perform troubleshooting activities – design ways to protect the LAN. *Assessment Tool* *Assessment Guide: Local Area Networks Project – Install and Troubleshoot (INF3020–1)* *Standard* *Rating of 2 in each applicable task*	20
	• prepare a proposal for maintaining a LAN that includes policy and procedures for: – network access and security – user access, rights, passwords – file/disk management – software and data upgrades. *Assessment Tool* *Assessment Guide: Local Area Networks Project – Proposal for Maintaining a LAN (INF3020–1)* *Standard* *Rating of 2 in each applicable task*	40
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10

MODULE INF3020: LOCAL AREA NETWORKS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic competencies.	*Assessment of student achievement should be based on:* • observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
LAN User	*The student should:* • access LAN facilities and download/upload data/information: – login, logoff – accessing files/programs on all servers/drives – organize data on servers and drives – demonstrate ability to connect to different printers on the network.	A network consists of computers and peripheral devices connected via communication lines so that information available on the file server can be accessed quickly and shared with multi-users within the parameters of the local area network system.
How Networks Work	• identify the LAN purpose/capabilities: – conditions under which a network is established – the location of a network configuration • compare network topologies such as: – network protocol – advantages of diskless terminals • compare network configuration such as: – evaluation of interface cards (NIC), servers, cables for compatibility with the operating system – analyze various configurations: RAM requirements, hard drive, laser/compact disk, different processors, parallel processing, parallel hard drives – compare different types of wiring and cabling designs.	

Concept	Specific Learner Expectations	Notes

Installing a Network	*The student should:*
	• configure/interface hardware:
	  – arrange/connect peripheral devices
	  – attach other component (e.g., printers)
	• install LAN software:
	  – install/backup/restore files
	  – create/use directories/folders
	  – incorporate file protection
	• use defaults, supervisor, housekeeping, diagnostic, viral protection software:
	  – set up users, security rights, and manage software
	  – build in defence on the LAN (e.g., protect against viruses, user abuse or hacking)
	• perform troubleshooting:
	  – diagnoses
	  – remediation
	• demonstrate acceptable LAN performance
	  – apply manager's responsibilities:
	    • schedule access
	    • provide assistance
	    • monitor activities
	    • recommend changes
	    • identify issues/trends
	• use support manuals/documentation:
	  – follow hardware/software and educational instructions.
		Students can be contracted for specific duties and responsibilities (consistent with school/ jurisdiction policy and professional/ethical working environment expectations) to work on an existing LAN or have an opportunity to work on a dedicated file server configured specifically to accommodate learning experiences contained in this module.
		Another option might involve developing community partnerships and have students apprentice on available LAN facilities.

LAN Policy and Procedures	• describe network policies:
	  – establish policies for:
	    • ethical use of software
	    • network access and security
	    • maintaining network data, software integrity
	    • file management and disk management
	    • file backup
	    • job description for the network manager	

Concept	Specific Learner Expectations	Notes
LAN Policy and Procedures (continued)	*The student should:* • define procedures for file management: – internal (floppies, files from server, subdirectories, physical drives, logical drives for copy protected and single user programs) – public drives – DOS drives – search drives • define the functions of network shell (copying selected drivers, linking programs, establishing connections for user and server, assigning user rights and names [password]).	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3030: KEYBOARDING 4

Level: Advanced

Theme: Text/Data Input

Prerequisite: INF2040 Keyboarding 3

Module Description: Students develop their text and data keyboarding skills to entry-level occupational expectations.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate proficient keyboarding competence:	• three timed writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :	
– text entry at 50 words per minute (wpm)	– on alphabetic keys • three-minute duration • maximum one uncorrected error • SI 1.3 – 1.4 • 50 words per minute	50
– numeric entry at 150 keystrokes per minute (kpm)	– on numeric keys: • one-minute duration • maximum one uncorrected error • 150 numeric keystrokes a minute on 1 to 5 digit numbers	10
– technique	– observations over the last quarter of the learning period, during timings and drill work. *Assessment Tool* *Assessment Checklist: Text–Data Entry (INFTDENT)* *Standard* *Rating of:* *3 – Eye Focus* *3 – Keystroking* *3 – Service Keys* *3 – Body Position*	30

BEST COPY AVAILABLE

MODULE INF3030: KEYBOARDING 4 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Text Entry	• demonstrate increasingly rapid, accurate touch keystroking on straight and draft (edited) copy of: – alphanumeric keys – all punctuation keys – service keys (enter, shift, delete, backspace, tab) • use function and cursor movement key efficiently • demonstrate correct keystroking technique: – enter text using designated fingers – maintain home-row anchor position – demonstrate correct posture (hands, arms, body)	Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (.5 to one minute) with straight copy text of varying SI. (1.2–1.6). Draft copy should include basic spacing, spelling, punctuation and spacing errors (no more than one error per every 10 words).

MODULE INF3030: KEYBOARDING 4 (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	*The student should:* • proofread and edit text (screen and hard copy) to ensure text is without error • analyze errors and initiate remediation as appropriate for: – spelling, shifting, punctuation and spacing errors – transposed, repeated, omitted letters.	
Data Entry	• demonstrate rapid, accurate data entry on keyboard number pad: – using designated fingers – maintaining anchor position.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3040: **KEYBOARDING 5**

Level: Advanced

Theme: Text/Data Input

Prerequisite: INF3030 Keyboarding 4

Module Description: Students increase their occupational-level keyboarding competence of text, data and function/service keys, using straight copy and edited material.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate proficient keyboarding competence:	• three timed writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding:	
– text entry at 60 words per minute (wpm)	– on alphabetic keys: • three-minute duration • maximum one uncorrected error • SI ≥ 1.35 • 60 words per minute	50
– numeric entry at 180 keystrokes per minute (kpm)	– on numeric keys: • one-minute duration • maximum one uncorrected error • 180 numeric keystrokes a minute on 1 to 6 digit numbers	20
– technique	– observations over the last quarter of the learning period, during timings and drill work. *Assessment Tool* *Assessment Checklist: Text–Data Entry (INFTDENT)* *Standard* *Rating of:* *3 – Eye Focus* *3 – Keystroking* *3 – Service Keys* *3 – Body Position*	20

MODULE INF3040: KEYBOARDING 5 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Text Entry	• demonstrate increasingly rapid, accurate touch keystroking on straight and draft copy (edited) of: – alphanumeric keys – all punctuation keys – service keys • use function and cursor movement keys efficiently • demonstrate correct keystroking technique: – enter text using designated fingers – maintain home-row anchor position – demonstrate correct posture (hands, arms, body) • proofread and edit text (screen and hard copy) to ensure text is without error	Enter, shift, delete, backspace, tab. Develop speed and accuracy at the phrase, sentence and short paragraph level using short, repetitive timings (.5 to one minute) with straight copy text of varying SI (1.2–1.6). Draft copy should include basic spacing, spelling, punctuation and spacing errors (no more than one error per every 10 words).

MODULE INF3040: KEYBOARDING 5 (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	*The student should:* • analyze errors and initiate remediation as appropriate for: – spelling, shifting, punctuation and spacing errors – transposed, repeated, omitted letters.	
Data Entry	• demonstrate rapid, accurate data entry on keyboard number pad: – using designated fingers – maintaining anchor position.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3050: KEYBOARDING 6

Level: Advanced

Theme: Text/Data Input

Prerequisite: INF3040 Keyboarding 5

Module Description: Students enhance their occupational-level keyboarding competence of all keystroke functions, using unedited, edited and straight copy material.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate proficient keyboarding competence:	*Assessment of student achievement should be based on:* • three timed writings each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding :	
– text entry at 70 words per minute (wpm)	– on alphabetic keys: • three-minute duration • maximum one uncorrected error • SI ≥ 1.35 • 70 words per minute	50
– numeric entry at 200 keystrokes per minute (kpm)	– on numeric keys: • one-minute duration • maximum one uncorrected error • 200 numeric keystrokes a minute on 1 to 6 digit numbers	20
– technique	– observations over the last quarter of the learning period, during timings and drill work. *Assessment Tool* *Assessment Checklist: Text–Data Entry (INFTDENT)* *Standard* *Rating of:* *3 – Eye Focus* *3 – Keystroking* *3 – Service Keys* *3 – Body Position*	20

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Text/Data Entry	• use formatted, straight-copy material as well as unformatted rough-draft material • touch-keystroke alphabetic, numeric, punctuation, service keys • consistently apply: – correct finger/key placement – healthful body position – acceptable eye/copy focus • use numeric keys and/or number pad.	A few five-minute timed attempts can be used to prepare for workplace expectations if deemed appropriate.

MODULE INF3050: KEYBOARDING 6 (continued)

Concept	Specific Learner Expectations	Notes
	The student should:	
Proofreading/Editing	• proofread/edit screen/documents • analyze errors/determine remediation • use spell check features • minimize errors: spelling, keystroking, punctuation, spacing, transposition, repeated, omitted • use appropriate commands, functions • format/output.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3060: WORD PROCESSING 3

Level: Advanced

Theme: Productivity Software

Prerequisites: INF2030 Keyboarding 2
INF2050 Word Processing 2

Module Description: Students develop occupational-level competence in the use of word processing software commands and functions to produce mailable reports, correspondence and tables, including the importing and merging of text, data and graphics.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Supporting Module: INF2040 Keyboarding 3

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate correct use of word processing software functions, by producing mailable, properly formatted copy of:	• producing mailable documents, based on formatted and unformatted sources, focusing on advanced functions and improved use of previously learned software functions through business applications including a collection of:	
– a multipage report with a title page, table of contents, bibliography and appendices	– a multipage report/publication containing: • macros/templates/autotext for a variety of formats • title pages, table of contents • headings (sub, side and/or paragraph) • references/bibliography • diagrams using draw features and text boxes • desktop publishing features of word processor • display paragraphs (e.g., enumerations, charts, graphs) • graphics, tables • merge with spreadsheet/database information • appendix, index. *Assessment Tool* *Assessment Checklist: Word Processing (INFWP)* *Standard* *Rating of 3 in the production of mailable documents (no errors in text and well formatted)*	30

MODULE INF3060: WORD PROCESSING 3 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
– two-page letters in designated letter styles that incorporate special formats	– two-page letters requiring at least two of the following functions: • letterhead (use of templates or autotext) • use of more detailed macros • inserting table, diagram, spreadsheet or chart • merging names/addresses) • enumeration • graphics. *Assessment Tool* *Assessment Checklist: Word Processing (INFWP)* *Standard* *Rating of 3 in the production of mailable documents (no errors in text and well formatted)*	25
– memorandums	– memos consisting of: • macros to format headings • reference notations. *Assessment Tool* *Assessment Checklist: Word Processing (INFWP)* *Standard* *Rating of 3 in the production of mailable documents (no errors in text and well formatted)*	10
– tables	– multicolumn tables containing: • graphics • merge • graph • sorted • parallel columns • column heads • footnotes • borders • shading • text boxes. *Assessment Tool* *Assessment Checklist: Word Processing (INFWP)* *Standard* *Rating of 3 in the production of mailable documents (no errors in text and well formatted)*	25

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Software Functions and Applications	• compare at least two word processing software packages: – capabilities – system requirements – platform options – command structure • demonstrate improved use of previously learned software functions • use help functions and references as appropriate • demonstrate use of advanced software functions such as: – use desktop publishing features – use draw features (when available) – insert graphics (import and design) – establish and use libraries, macros	Students should incorporate desktop publishing features to improve document readability; e.g.: – layout/spacing – font type, style, size.

MODULE INF3060: WORD PROCESSING 3 (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	*The student should:* – design and use more detailed macros – merge and sort text – customizing features (e.g., toolbar and menus) • move through document(s) efficiently by using appropriate cursor movement, tools/commands.	
Document Production	• demonstrate appropriate key commands to: – save files (alternative formats) – print documents • replicate, convert and append files • print documents (alternative formats) • print templates • demonstrate appropriate key commands to produce the following documents in mailable form: – reports: • headings/subheading • references (footnotes, end notes, bibliography) • headers/footers • title page • table of contents • indexes – personal and business letters: • letter parts (date, inside address, salutations, complimentary closing, name/title, references) • letter styles • subject/attention lines • special notations – tables (single/multicolumn): • headings • borders/shading • rulers/tabs • sorted.	Use macros as appropriate. Mailable form: document is accurate and correctly formatted. Students should be familiar with various document styles, including: Reports: – research reports/papers – manuscripts – articles – brochures – position papers Correspondence: – full block – semi-block – set customized styles used by businesses in the community.

MODULE INF3060: WORD PROCESSING 3 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3070: **ELECTRONIC PUBLISHING 2**

Level: Advanced

Theme: Productivity Software

Prerequisite: INF2060 Electronic Publishing 1

Module Description: Students use the functions and commands of electronic/desktop publishing software as they integrate text composing, editing, typesetting, graphics generation and page layout functions to create customized, professional, quality documents.

Module Parameters: Computer workstation, disk, electronic/desktop publishing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate electronic publishing software competence, by: – creating a customized document effectively incorporating text and graphics to communicate an idea or activity – applying software make-up tools and commands	• production of accurate, well-designed multipage original publications focusing on advanced software functions and continued use of previously learned software functions and layout principles including: – multicolumn – text (body and display) – follow copyright laws – layout principles such as optical centre, balance, white space, columns, Z pattern, contrast, rhythm, unity – additional layout principles including colour, proportion, golden section, bleed and trim	60
	• advanced software functions consisting of: – style sheet, page masters or templates – graphics and/or artwork (graphic tools, scanning, clip art files) – style palette (captions, headlines, body, text) – story editor – publication enhancements (e.g., pull quotes, sidebars and footnotes, mastheads and banners, two-page spread graphics – print composite and colour separation.	30
	Assessment Tool *Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)* *Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)*	
	Standard *Rating of 3 in the production of accurate, well-designed publications*	

MODULE INF3070: ELECTRONIC PUBLISHING 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
- **apply, consistently, appropriate workstation routines**	- demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
- demonstrate basic competencies.	- observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Software Functions and Applications	- describe key features of the desktop publishing software package: – capabilities – system requirements – platform options – command structure - identify data input sources	Research a variety of desktop publishing applications. Sources of graphics – clip art – art creation – mechanical drawing animation.

MODULE INF3070: ELECTRONIC PUBLISHING 2 (continued)

Concept	Specific Learner Expectations	Notes
Software Functions and Applications (continued)	*The student should:* • demonstrate appropriate key commands to: – open/create files/templates – key, load, import, scan text and graphic files – name files – import ASCII – file conversion – format text/graphics – proofread, edit text, position graphics • address the factors that affect desktop publishing layout: – identify audience, message – determine budget, resource, time constraints • establish document layout and specifications • create/import graphics elements: – clip art – art creation – mechanical drawing – animation • merge graphics and text • use story editor: – back publications – index entry/format – page/cross reference – character codes • use graphics: – gray scale scans – independent versus inline – image control – lightness/contrast settings – multicolour – overlays – edits • create page format(s): – import/export and link data charts to other applications • plan/create customized desktop templates • move through document(s) efficiently by using appropriate cursor movement tools/commands • create objects using special effects • use help functions and references as appropriate.	Select various desktop publishing applications that combine text and graphics, and incorporate desktop publishing features: – personal documents – class assignments – school stationery, newsletter, newspaper, yearbook – signs, announcements – invitations – advertisements – brochures (single-, folded-page) – reports, manuals, booklets – community activities – customer documents – business applications. Prepare text, illustrations, graphics. Create camera-ready page layouts. Adhere to publishing industry standards.

MODULE INF3070: ELECTRONIC PUBLISHING 2 (continued)

Concept	Specific Learner Expectations	Notes
Document Production	*The student should:* • demonstrate appropriate key commands to: – save files – print documents – printer drivers – bitmapped – postscript/non-postscript • demonstrate appropriate key commands to produce quality desktop publishing documents.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3080: INFORMATION MANAGEMENT TOOLS

Level: Advanced

Theme: Productivity Software

Prerequisite: INF1010 Computer Operations

Module Description: Students develop competence in using information management systems software, such as project management, schedules and planners for either personal or workplace applications.

Module Parameters: Computer workstation, disk, information management system software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate the ability to use information management software, to: – plan projects, including setting goals, timelines and determining resource needs – monitor projects, including time and resource management – adjust project files, as appropriate – prepare project reports	• an information management project using project management software to: – plan an identified project (business or personal) – monitor the project – make adjustments where appropriate – prepare project reports. *Assessment Tool* *Assessment Guide: Information Management Project Planning/Monitoring (INF3080–1)* *Standard* *Rating of 3 in each applicable task*	70
• describe the features of the information management software used	• present the information management tool to others by demonstrating and discussing its capabilities. *Assessment Tool* *Assessment Guide: Information Management Project Presenting (INF3080–2)* *Standard* *Rating of 3 in each applicable task*	20

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Planning	• organize relevant data; e.g., building a house, putting on a play, building a multimedia presentation • define basic project information – identify all key tasks – link tasks where appropriate – assign task duration • organize tasks into an outline and detail each subtask: – view different levels of task detail (expand/collapse) – set milestones – create a base calendar • create resources lists: – enter cost information – assign resources – apply appropriate constraints.	

MODULE INF3080: INFORMATION MANAGEMENT TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Monitoring	*The student should:* • identify critical issues • resolve time restrictions • resolve resource constraints • sort and filter data • generate project reports.	
Presentation	• demonstrate the information management tool to others • describe the capabilities of the tool • describe how a person or business can benefit from the use of the management tool.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3090: **SOFTWARE INTEGRATION 3**

Level: Advanced

Theme: Applied Processing

Prerequisite: INF3120 Software Integration 2

Module Description: Students develop high production rates as they process documents from unedited and unformatted copy, using numerous functions/commands to create, revise, format and print a wide range of mailable copy.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate competence in producing multipage documents and presentations that integrate word processing, spreadsheet, database and graphics files/documents from: – unedited copy – unformatted copy	• create multipage (more than 10 pages) document(s) (enter, edit, format, print) from unedited, unformatted sources that integrate and link (i.e., OLE/subscribe/ publish) data text and graphics. Documents should make use of the following types of software: word processing, spreadsheet, database, graphics	70
	• edit multipage documents created to produce a presentation that includes word processing, spreadsheet, database and graphics software.	20
	Assessment Tool *Assessment Checklist: Software Integration 1, 2 and 3 (INFINTEG)*	
	Standard *Rating of 3 in the production of accurate and well-formatted documents*	

BEST COPY AVAILABLE

MODULE INF3090: SOFTWARE INTEGRATION 3 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Document Production	• describe the purpose of the document: – target audience – single/multiple/presentation copy	
	• apply word processing, database, spreadsheet, paint/draw commands as appropriate to import, create, merge and link spreadsheet, database and graphics documents with a word processing file	Applications should include object linking/embedding (OLE) of SS and DB into WP.
	• manipulate word processing, database, spreadsheet, graphics software to produce mailable documents from drafts: – edited, unformatted – unedited, unformatted – edited, formatted	Potential sources of documents: – simulations – in-baskets – projects.
	• follow instructions to customize/personalize existing text and data files.	

MODULE INF3090: SOFTWARE INTEGRATION 3 (continued)

Concept	Specific Learner Expectations	Notes
Document Editing	*The student should:* • load, redesign, reformat, or modify existing templates and files containing information from word processing, database, spreadsheet and graphics files to prepare a presentation • revise documents to be aesthetically pleasing and well-formatted. • save and print documents.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3100: **SPECIALIZATION 1**

Level: Advanced

Theme: Applied Processing

Prerequisites:
INF2030 Keyboarding 2
INF2050 Word Processing 2
INF2120 Software Integration 1

Module Description: Students specialize in document preparation, terminology application and associated office routine expectations in a specific focus area, such as a medical, legal, petroleum, real estate, insurance, travel/tourism, forestry or agricultural environment.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate basic competence in a specific focus area, by:		
– using appropriate terminology	• appropriate use of terminology in the area of specialization	10
– preparing and producing documents – exhibiting professional attributes	• collection of documents related to the area of specialization consisting of:	
	– prioritizing tasks and producing documents using office routines, practices and communication skills related to the area of specialization	60
	– editing documents.	20
	Assessment Tool *Assessment Checklist: Specialization 1 & 2 (INFSPEC)*	
	Standard *Rating of 2 in all the preparation of accurate, well-formatted specialized documents*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines.	10
	Assessment Tool *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)*	
	Standard *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	

MODULE INF3100: SPECIALIZATION 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: - demonstrate basic competencies.	*Assessment of student achievement should be based on:* - observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
Specialization Focus	*The student should:* - identify/research focus area: – work environment – stakeholder groups – routines and practices – internal/external characters/parameters – existing community offices – specialized documents - describe workplace expectations: – personnel/duties – office layout – facilities/equipment – resource support - define and use specialized terminology related to area of specialization	The ability to efficiently apply specific terminology and documentation knowledge in a recognized professional, industrial or business workplace setting enhances opportunities for entry-level employment. This module could consist of a simulation, off-campus experience, student-initiated project, in-basket exercises, or integrated problem requiring specific document preparation, terminology application and workplace environment activities.
Document Production	- produce and edit a variety of documents in the area of specialization - use sample(s) or templates of specialized documents to design well-formatted documents	

MODULE INF3100: SPECIALIZATION 1 (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	*The student should:* • establish timelines, priorities, required resources • format/revise output document(s) for internal/ external use: – verify content, format and instructions – check reports, forms, documents for mailability – prepare backup/records.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3110: **SPECIALIZATION 2**

Level: Advanced

Theme: Applied Processing

Prerequisites: INF3100 Specialization 1
INF3120 Software Integration 2

Module Description: Students develop workplace competence in a specific focus area, such as medical, legal, petroleum, real estate, insurance, travel/tourism, forestry or agricultural environment, by creating and completing appropriate documents that employ specialized communication skills and conform to workplace expectations and time constraints.

Module Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate entry-level workplace competence in a specific focus area, by:		
– using appropriate terminology	• appropriate use of terminology in the area of specialization	10
– preparing and producing documents – exhibiting professional attributes	• collection of documents related to the area of specialization consisting of:	
	– preparation of mailable specialized documents under time constraints appropriate for complexity of task based on unformatted sources	60
	– a minimum expected keyboarding competency of 30 wpm based on Keyboarding 2 competency	
	– prioritizing tasks and producing documents	
	– using office routines, practices and communication skills related to the area of specialization	
	– editing documents.	20
	Assessment Tool *Assessment Checklist: Specialization 1 & 2 (INFSPEC)*	
	Standard *Rating of 3 in the preparation of accurate, well-formatted specialized documents under time constraints*	

MODULE INF3110: SPECIALIZATION 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Specialization Focus	• enhance knowledge of focus area: – work environment – stakeholder groups – routines and practices – internal/external characteristics/parameters – existing community offices – specialized documents • focus on workplace expectations: – personnel/duties – office layout – facilities/equipment – resource support • improve use of specialized terminology related to area of specialization.	The demonstration of competence in a specific focus-area broadens opportunities for employment in a professional, industrial or business environment.

MODULE INF3110: SPECIALIZATION 2 (continued)

Concept	Specific Learner Expectations	Notes
Document Production	*The student should:* • produce and edit a variety of documents in the area of specialization under time constraints • use sample(s) or templates of specialized documents to design well-formatted documents • create timelines, priorities, required resources • format/revise output document(s) for internal/external use: – verify content, format and instructions – check reports, forms, documents for mailability – prepare backup/records.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3120: SOFTWARE INTEGRATION 2

Level: Advanced

Theme: Applied Processing

Prerequisite: INF2120 Software Integration 1

Module Description: Students expand their document production skills to workplace standards. Documents could require the importing and integration of word processing, spreadsheet, graphics and database files.

Module Parameters: Access to word processing, spreadsheet, database, graphics software.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate competence in producing documents that integrate word processing, spreadsheet, database and graphics files/documents from: – unedited copy – unformatted copy	• create four- to ten-page document(s) (enter, format, edit and print) from unedited, unformatted sources that integrate and link (i.e., OLE/subscribe/publish) data, text, and graphics. Documents should make use of at least three of the following types of software: – word processing – spreadsheet – database – spreadsheets including chart graphing – graphics (paint and draw, clip art files)	70
	• editing to produce error-free, well-formatted document(s).	20
	Assessment Tools *Assessment Checklist: Software Integration 1, 2 and 3 (INFINTEG)*	
	Standard *Rating of 2 in the production of accurate and well-formatted documents*	

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Document Production	• describe the purpose of the document: – target audience – single/multiple/presentation copy	
	• apply word processing, database, spreadsheet, paint/draw commands as appropriate to import, merge and link spreadsheet, database and graphic documents with word processing file	Applications should include object linking/embedding (OLE) of SS and DB into WP.
	• manipulate word processing, database, spreadsheet, graphics software to produce mailable documents from drafts: – edited and unedited, unformatted – edited, formatted	Potential sources of documents: – simulations – in-baskets – projects.
	• follow instructions to customize/personalize existing text and data files.	

MODULE INF3120: SOFTWARE INTEGRATION 2 (continued)

Concept	Specific Learner Expectations	Notes
Document Editing	*The student should:* • load, redesign, reformat, or modify existing templates and files containing information from database, spreadsheet, presentation graphics files • revise documents to be aesthetically pleasing and well formatted • save and print documents.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3130: **MULTIMEDIA AUTHORING 2**

Level: Advanced

Theme: Productivity Software

Prerequisite: INF2130 Multimedia Authoring 1

Module Description: Students learn to use a multimedia file or multimedia authoring software based on digitized input of text, video and audio clips.

Module Parameters: Computer workstation, multimedia software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• demonstrate multimedia authoring software and digitized input competence, by: – capturing text/ images, video and audio information from external sources, and inputting it on a computer – using captured text/images, video and audio to create a multimedia presentation	• planning, producing, editing and testing of a multimedia presentation that includes original text, graphics, video, audio and animation with the individual components supporting a common theme:	20
	– create and import textual material – create and import graphics – create and import video clips – create and import audio clips – create and import animation clips. *Assessment Tool* *Assessment Checklist: Multimedia Software Functions (INFMMSF)* *Assessment Checklist: Multimedia Productions and Presentations (INFMMDOC)* *Standard* *Rating of 2*	70
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10

MODULE INF3130: MULTIMEDIA AUTHORING 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic competencies.	*Assessment of student achievement should be based on:* • observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
Multimedia Software Authoring Skill	*The student should:* • demonstrate ability to use identified multimedia software in the planning of a presentation that includes creating and importing of: – text – graphics – video – sound – animation • import text/images, video and audio information • manipulate text/images and audio information as required.	
Multimedia Authoring Application	• plan steps in preparing a multimedia presentation • prepare a storyboard, outlining the presentation's content and special effects for a particular theme • make decisions regarding text, sound, graphics, video and animation • select and use appropriate tools, commands and devises • apply software commands	

MODULE INF3130: MULTIMEDIA AUTHORING 2 (continued)

Concept	Specific Learner Expectations	Notes
Multimedia Authoring Application (continued)	*The student should:* • create a customized multimedia authored file/movie (key, import, digitize text, video, audio clips) using software program(s) and external sources by doing all or some of the following: – establish windows/screen parameters and characteristics – determine clip considerations – open/import/digitize source clips: • still-images • animation • audio clips • window files • special files – edit windows/screens using: • tool kit functions • command options – edit clips (trim/split/join/align) • preview segments, tracks, sequence • print/export file; storyboard the window/screen; enhance with visual transitions; apply digital filters; create titles/graphics; superimpose clips • run uncompiled sequence; play compiled movie (videotape recording, edit decision list).	Multimedia software uses the power of the computer to create presentations that integrate text information, visual images and sound tracks. Sources of input include both software-resident clips as well as externally digitized images from videotape, full-motion video sequences, music segments, computer-generated animation, CD/laser discs and other graphics elements including still images, paintings or photographs.

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3140: EXPERT SYSTEMS

Level: Advanced

Theme: Dynamic Environment

Prerequisites: INF1070 Hypermedia Tools
INF3130 Multimedia Authoring 2

Module Description: Students acquire knowledge of expert systems, such as artificial intelligence and virtual reality. They gain competence, by developing or modifying programs that incorporate computer-controlled environments and multimedia interactive activities and applications.

Module Parameters: Computer workstation, software, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **develop an information portfolio on expert systems and other advanced technologies**	• an artificial intelligence project focusing on expert systems consisting of: – research of an expert system, including what it is, its effects on society and a description of how it is used	35
• **program an application, using one of these systems and present the results**	– use of an appropriate programming language/artificial intelligence software package to: • solve a specific problem or • modify an existing application	35
	– explain/demonstrate expert system principles and application(s).	20
	Assessment Tools *Assessment Guide: Artificial Intelligence (AI) Project (INF3140–1)* *Artificial Intelligence (AI) Sample Project (INF3140–2)* *Standard* *Rating of 2 in all applicable tasks*	

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Artificial Intelligence/ Virtual Reality Application	• identify software/application(s): – simulations, telerobotics, telecollaboration, telepresence systems, architecture, audio/airline industry, medicine, physical fitness and entertainment • plan/create/modify a program and/or activity according to provided instructions • collect required support resources.	
Expert Systems Programming and Software	• apply expert system software commands/instructions/code: – load/create customize/modify expert systems software templates, stacks, files or simulation application that supports an artificial intelligence and/or virtual reality project or scratch program/modify existing program(s)	

MODULE INF3140: EXPERT SYSTEMS (continued)

Concept	Specific Learner Expectations	Notes
Expert Systems Programming and Software (continued)	*The student should:* • input data: – design/define project parameters: • flowchart sequence – enter data: • key, load data • create/import/scan graphic elements access/manipulate data/information: – create background – edit/modify/update data/information – use resident commands – link file(s) – incorporate text (alphabetic, numeric), graphics, motion, sound – demonstrate artificial intelligence/virtual reality/other high technology capability • output expert system activities – display/print/export • artificial intelligence file • virtual reality file.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3150: **PROGRAMMING APPLICATION 1**

Level: Advanced

Theme: Programming

Prerequisite: INF1010 Computer Operations

Module Description: Students create programs that use external files.

Module Parameters: Computer workstation, programming language software, language code manual, support resources.

Supporting Modules: INF2150 Programming 2; INF2160 Programming 3; INF2170 Programming 4; INF2180 Programming 5

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **create an algorithm to solve problems requiring an external data file**	• distinguishing programming problems requiring the use of external data files • distinguishing programming problems requiring text versus nontext files	30
• **develop programs that create, retrieve, append and modify text/nontext files**	• creating and revising programs that will create, retrieve, append and modify external data files • creating and revising programs that will sequentially/ randomly access data from external data files. *Assessment Tool* *Assessment Checklist: Advanced Programming Applications (INFPRGM3)* *Programming: Sample Assignment: PA1 (INFPSAM3)* *Standard* *Rating of 3 in the creation and presentation of programs*	60
• **apply, consistently, appropriate workstation routines**	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10

MODULE INF3150: PROGRAMMING APPLICATION 1 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic competencies.	*Assessment of student achievement should be based on:* • observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms/Classes	• modify existing/develop new algorithms/classes • identify/describe the problem • list each step required to solve the problem/list the required components of the data structure • demonstrate the appropriate logic/data components required to achieve the solution • demonstrate the appropriate methods of creating and accessing data stored in external files • compare characteristics and use of text and binary files • select appropriate file structure based on problem characteristics • apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks.
Computer Language Syntax	• use constants, variables, data structures, operands • use reserved words, commands, statements, operators, subroutines, functions • use language-specific derived data types	See notes from Programming 5, if available.

MODULE INF3150: PROGRAMMING APPLICATION 1 (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax (continued)	*The student should:* • input data using reserved words or predefined classes: – embed/read from external files/enter data – create/assign values/operations to derived data types – open and access contents of text and binary files sequentially/randomly • process data: – calculations/manipulations/decision control/ branching/looping/subroutines/functions/ classes/objects/methods/files • edit/modify existing code • output/link program segments/programs using reserved words or predefined classes: – text/data/graphics – create and access text and binary files.	
Structure Computer Programming Applications	• access appropriate computer language resource support • describe the purpose/use of text and binary files • describe the need for/advantages of text and binary files • use/develop program segments that create/open/write to/read from/append to text and binary files • use/develop program segments that access the contents of external files sequentially and randomly • use/develop program segments that access multiple files • identify situations that lend themselves to specific types of file structures • apply appropriate file structures and operations in a program • produce algorithms/classes	

MODULE INF3150: PROGRAMMING APPLICATION 1 (continued)

Concept	Specific Learner Expectations	Notes
Structure Computer Programming Applications (continued)	*The student should:* • produce output format/file structure • key/code the instructions • test run program • debug/edit program • execute program • document program • assess activities/results.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3160: PROGRAMMING APPLICATION 2

Level: Advanced

Theme: Programming

Prerequisite: INF3150 Programming Application 1

Module Description: Students create a program, using a second programming language.

Module Parameters: Computer workstation, programming language, language code manual, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• employ existing algorithms to solve programming problems	• formulating an algorithm for the solution of the problem • distinguishing generic characteristics of problems and design algorithmic solutions independent of programming language	20
• create programs to solve problems in a second programming language that include: – input/output – mathematical functions – looping and branching – subprogram structures	• constructing programs that: – use predefined language specific variables – assign values to variables within the program and via the keyboard – use language-specific commands to perform iterative and decision control operations (relational and logic) – use language-specific subprogram structures – use language-specific reserved words/structures for generating and formatting output. *Assessment Tool* *Assessment Checklist: Advanced Programming Applications (INFPRGM3)* *Programming: Sample Assignment: PA1 (INFPSAM3)* *Standard* *Rating of 3 in the creation and presentation of programs*	70

MODULE INF3160: PROGRAMMING APPLICATION 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms/Classes	• modify existing/develop new algorithms/classes • identify/describe the problem • list each step required to solve the problem/list the required components of the data structure • demonstrate the appropriate logic/data components required to achieve the solution • identify generic characteristics of programming languages • identify steps involved in problem solving independent of programming language • apply structured programming constructs to modify/create a schematic/flowchart/ pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers design algorithms and use either a procedure-oriented or object-oriented language structure to code instructions for specific and unique computer tasks. Various computer languages have been developed over the years to improve computer communication efficiency.

Concept	Specific Learner Expectations	Notes
	The student should:	
Computer Language Syntax	• use constraints, variables, data structures, operands in a second programming language • use reserved words, commands, statements, operators, subroutines, functions in a second programming language • use second language-specific derived data types • input data using reserved words or predefined classes of a second programming language: – embed/read/enter data – create/assign values/operations to derived data types • process data using second language constructs: – calculations/manipulations/decision control/ branching/looping/subroutines/functions/ classes/objects/methods • output/link program segments/programs using reserved words or predefined classes of a second programming language: – text/data/graphics.	See notes from Programming 5.
Structure Computer Programming Applications	• access appropriate computer language resource support • describe the parallels/differences between the two programming languages • use/develop program segments using second language constructs to enter/manipulate/output data • recode first language programs using second programming language • apply second language constructs in a program • produce algorithms/classes • produce output format • key/code the instructions • test run programs • debug/edit program • execute program • document program • assess activities/results.	

Concept	Specific Learner Expectations	Notes
	The student should:	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3170: **PROGRAMMING APPLICATION 3**

Level: Advanced

Theme: Programming

Prerequisite: INF3160 Programming Application 2

Module Description: Students enhance a program, using a second programming language.

Module Parameters: Computer workstation, programming language, language code manual, support resources.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• create algorithms to solve programming problems	• formulating an algorithm for the solution of the problem • distinguishing generic characteristics of problems and design algorithmic solutions independent of programming language	20
• create programs to solve problems, in a second programming language that include: – one- and two-dimensional arrays – character strings – sort, search and merge operations – external data files	• constructing programs that – use one- and two-dimensional arrays – perform operations on character strings – sort, search and merge operations – create/access external data files. *Assessment Tool* *Assessment Checklist: Advanced Programming Applications (INFPRGM3)* *Programming: Sample Assignment: PA1 (INFPSAM3)* *Standard* *Rating of 3 in the creation and presentation of programs*	70
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10

MODULE INF3170: PROGRAMMING APPLICATION 3 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will: - demonstrate basic competencies.	*Assessment of student achievement should be based on:* - observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Algorithms/Classes	- modify existing/develop new algorithms/classes - identify/describe the problem - list each step required to solve the problem/list the required components of the data structure - demonstrate the appropriate logic/data components required to achieve the solution - identify steps involved in problem solving independent of programming language - apply structured programming constructs to modify/create a schematic/flowchart/pseudocode indicating how the solution will be achieved (IPO/HIPO).	Programmers normally follow a general or specific set of guidelines when developing computer programs for a client. However, when creating their own computer programs they are able to work within the parameters of their own creativity.
Computer Language Syntax	- use constraints, variables, data structures, operands in an appropriate programming language - use reserved words, commands, statements, operators, subroutines, functions in the selected programming language - use language-specific derived data types	See notes from Programming 5.

MODULE INF3170: PROGRAMMING APPLICATION 3 (continued)

Concept	Specific Learner Expectations	Notes
Computer Language Syntax (continued)	*The student should:* • input data using reserved words or predefined classes: – embed/read/enter data – create/assign values/operations to derived data types • process data: – calculations/manipulations/decision control/ branching/looping/subroutines/ functions/classes/objects/methods • output/link program segments/programs using reserved words or predefined classes: – text/data/graphics.	
Structure Computer Programming Applications	• access appropriate computer language resource support • use/develop program segments to enter/ manipulate/output data • apply selected language constructs in a program • produce algorithms/classes • produce output format • key/code the instructions • test run programs • debug/edit program • execute program • document program • assess activities/results.	

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3180: **TELECOMMUNICATIONS 2**

Level: Advanced

Theme: System Operations

Prerequisite: INF2190 Telecommunications 1

Module Description: Students demonstrate knowledge of telecommunications systems by designing a new system. They use the Internet in researching and developing their design and for comparing and contrasting various telecommunications initiatives. Students analyze the effect this is having on the individual and society.

Module Parameters: Computer workstation, utility software, access to Internet, support resources.

Supporting Module: INF2200 Information Highway 2

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• use appropriate telecommunications systems, protocols and techniques to transfer messages and manage research	• demonstrating effective and efficient use of at least two communication systems. *Assessment Tool* *Assessment Checklist: Telecommunication Systems Infrastructure Presentation/Report (INF3180–1)* *Standard* *Rating of 3 for all applicable tasks*	15
• describe how telecommunications systems are evolving, merging and connecting	• report or presentation describing two examples of new telecommunication systems: – target audience – benefits and impacts (individual and societal) – merging and connecting technologies *Assessment Tool* *Assessment Checklist: Telecommunication Systems Infrastructure Presentation/Report (INF3180–2)* *Standard* *Rating of 3 in all applicable tasks*	15
• design a telecommunications solution that improves communication for an individual, business, or society	• a design project that includes: – problem being addressed – intended benefits – projected impacts – technical outline (schematic and/or prototype) – cost projections. *Assessment Tool* *Assessment Checklist: Telecommunication Design Project (INF3180–3)* *Standard* *Rating of 3 in all applicable tasks*	60

BEST COPY AVAILABLE

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
• apply, consistently, appropriate workstation routines	• demonstrate appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTN)* *Standard* *Rating of:* *3 – Workstation Use* *3 – File Management* *3 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tool noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Transmission Forms and Systems	• create a telecommunications solution that improves communication options for individuals, business and society • compare and contrast various types of transmission systems: – type of information that can be transmitted – present installation base – ability to connect with other systems – future/potential in the telecommunications industry – cost-benefit • describe how common standards allows telecommunication systems to merge and connect	

MODULE INF3180: TELECOMMUNICATIONS 2 (continued)

Concept	Specific Learner Expectations	Notes
Transmission Forms and Systems (continued)	*The student should:* • identify the types of transmission protocols and common languages used in telecommunications systems and describe how and when they are used.	• FTP - file transfer protocol • HTTP - hypertext transfer protocol TCP/IP – Internet transmission control protocol/Internet protocol
Telecommunication Infrastructures	• compare and contrast key elements of an effective computer infrastructure in two or more applications: – transmission systems – information and interactive applications/services – software applications – standards and protocols – people/expertise • identify and analyze key challenges facing computer mediated communications; e.g.: – regulation versus open systems – equity of access • describe cost implications to establish and maintain a telecommunication system	
Impact on the Individual and Society	• identify key social challenges in managing telecommunication technologies in our society: – access: • regulation versus open systems • personal privacy • ease and equity of access (usability, costs) – use/applications: • legal/illegal • ethical/unethical • courtesies/protocols • viruses (positive/negative) • describe economic challenges and benefits of a growing telecommunications industry	

MODULE INF3180: TELECOMMUNICATIONS 2 (continued)

Concept	Specific Learner Expectations	Notes
Impact on the Individual and Society (continued)	• research different career opportunities in the telecommunications sector: – competency requirements – educational requirements – benefits – work environment.	
Workstation Management	• apply efficient workstation position and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools.	

MODULE INF3190: **INFORMATION HIGHWAY 3**

Level: Advanced

Theme: Dynamic Environment

Prerequisite: INF2200 Information Highway 2

Module Description: Students develop and maintain an Internet/intranet web site that makes use of advanced features.

Module Parameters: Access to networked computer workstation and the Internet.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **develop a multipage web site to be placed on the Internet or a local intranet**	• developing a multipage web site (on an agreed upon topic), which includes: – evidence of preplanning – a visually pleasing design – a suitably organized layout – appropriate links, text, graphics, anchors, plus advanced feature(s). *Assessment Tool* *Assessment Guide: Information Highway 3 – Researching/Designing/Creating (INF3190–1)* *Standard* *Rating of 3 for all applicable tasks*	35
• **present and describe to a group, the advanced features of a web site**	• presentation or report that includes: – demonstrating how the advanced feature(s) works on the page – explain the procedures followed to make the advanced feature(s) work – assist others to include the same advanced feature(s) in their own project. *Assessment Tool* *Assessment Guide: Information Highway 3 – Presenting/Documenting (INF3190–1)*	20

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• maintain and enhance a web site to improve features and functions	• demonstration of effective and efficient maintenance and enhancement of a web site by: – updating data – editing text, sound, animation, graphics, etc. *Assessment Tool* *Assessment Guide: Information Highway 3 – Maintaining/Enhancing (INF3190–1)* *Standard* *Rating of 3 for all applicable tasks*	35
• apply, consistently, appropriate workstation routines	• demonstration of appropriate workstation routines. *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTA)* *Standard* *Rating of* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observation of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Site Research and Design	• plan the web site pages using a storyboard or similar tool • research available features of effective web sites and choose which one(s) to include.	

MODULE INF3190: INFORMATION HIGHWAY 3 (continued)

Concept	Specific Learner Expectations	Notes
Site Creation	*The student should:* • create the web site including: – pages – text – graphics – links/anchors – advanced feature(s) (e.g., sound, animation, 3D graphics, video) • format information in an acceptable and creative style • test and debug web site.	
Presentation and Documentation	• display the web pages to a group – use available presentation • describe how the advanced feature(s) function • instruct a group on how to program the feature(s) into their pages • assist others in the use of the feature(s) • properly cite all resources.	
Maintenance and Enhancement	• identify which areas of web pages need monitoring and updating • evaluate the impact of the web site • using a newly created or existing web site: – update data – edit web site (e.g., graphics) – add/modify special feature(s)	This page will include at least one of sound, animation, 3D graphics, video, frames, etc.

MODULE INF3190: INFORMATION HIGHWAY 3 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation positions and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies when using the Internet • use related terminology to describe basic protocols, processes and tools.	

MODULE INF3200: **INTERNET SERVICES**

Level: Advanced

Theme: Dynamic Environment

Prerequisite: INF2200 Information Highway 2

Module Description: Students expand their skills from Information Highway 2, by learning how to operate, maintain and build an Internet/intranet site that may include computer bulletin boards, forums, electronic mail, Internet list servers, and/or moderated newsgroups. Proper use of hardware, software and liaison with users and clients is emphasized.

Module Parameters: Access to networked computer workstation and the Internet or intranet.

Supporting Module: INF3190 Information Highway 3

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• **demonstrate competencies to access information from existing electronic messaging systems**	• demonstrating ability to access at least two of the following Internet services—newsgroups, electronic mail, Internet list servers, etc.—efficiently, following established netiquette procedures	20
• **design and create an electronic messaging system**	• designing and building at least one of functional specialized web site, electronic mail system, computer bulletin board, FTP site, news server, Internet list server by: – configuring hardware – installing software	40
• **maintain and enhance an electronic messaging system**	• maintaining files and user accounts – troubleshooting and diagnosing problems – offering user support services – monitoring/updating information and messages. *Assessment Tool* *Assessment Guide: Internet Services (INF3200–1)* *Standard* *Rating of 3 for all applicable tasks*	30

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
The student will:	*Assessment of student achievement should be based on:*	
• apply, consistently, appropriate workstation routines	• demonstration of appropriate workstation routines *Assessment Tool* *Assessment Checklist: Workstation Routines and Management (INFWRKSTA)* *Standard* *Rating of:* *2 – Workstation Use* *3 – File Management* *2 – Time Management/Organization* *3 – Professionalism*	10
• demonstrate basic competencies.	• observation of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Learner Expectations	Notes
	The student should:	
Access Information	• access information from existing computer messaging systems: – in-house facilities – local area facilities – long distance facilities • identify and apply appropriate security procedure.	The student(s) should identify potential or real client(s) and users for their service. This could be a school, local company, community group, club or other organization.
Design/Creation	• identify electronic messaging system specifications that address: – reasons/conditions to establish network – the structure and choice of Web site, e-mail, list server, bulletin board system, Forum or other messaging system – hardware/software selection – network topologies/training requirements and inter-network connections – financial considerations – ergonomic factors	Consider apprenticeship or student contract for hands-on experiences. A web site could be as simple as a file system on a standalone computer. An example of a specialized web site would be a student council survey (i.e., a data collection web site).

MODULE INF3200: INTERNET SERVICES (continued)

Concept	Specific Learner Expectations	Notes
Design/Creation (continued)	*The student should:* • design and assemble a functioning system: – troubleshooting – diagnosis and remediation • identify basic hardware components and processes necessary to create a functional specialized web site, computer bulletin board, e-mail system, newsgroup, list server, etc. • configure interface/hardware/peripherals • use support manuals/documentation • install appropriate system software • install backup/restore files: – create/use directories/folders – incorporate file protection – create/delete messages and information.	
Maintenance/ Enhancement	• demonstrate manager's responsibilities: – update information – monitor access/activities – schedule assistance activities – provide assistance to users and clients – evaluate performance – recommend changes – determine parameters/update messages • maintain/update application, operating system and utility software on hard drive – use defaults, supervisor housekeeping, diagnostic, viral protection software • demonstrate acceptable electronic communication system operational performance • use support manuals/documentation • follow hardware/software and school/educational regulations • adhere to legal, professional and ethical expectations • establish policies and procedures; e.g., create an acceptable format policy for web pages.	Consider apprenticeship or student contract for hands-on experiences. An example of a specialized web site would be a student council survey (i.e., a data collection web site).

Concept	Specific Learner Expectations	Notes
Workstation Management	*The student should:* • apply efficient workstation positions and routines that encourage: – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies when using the Internet • use related terminology to describe basic protocols, processes and tools.	

221

INFORMATION PROCESSING

SECTION G: ASSESSMENT TOOLS

The following pages comprise background information and strategies for assessing student achievement and the assessment tools that are listed in Sections D, E and F of this Guide.

This section of the Guide to Standards and Implementation has been designed to provide a common base of understanding about the level of competencies students are expected to demonstrate to successfully complete a module. The goal is to establish assessment standards for junior and senior high school students that are fair, credible and challenging.

These tools will assist teachers throughout the province to more consistently assess student achievement. The purpose of expanding on the assessment standards is to:

- increase confidence among students, parents, business/industry and post-secondary that students can demonstrate the competencies specified in the modules they have completed
- encourage fairness and equity in how students' efforts are judged
- enable learners to focus effort on key learnings
- support teachers and community partners in planning and implementing CTS.

These tools were validated during the optional stage of CTS implementation.

TABLE OF CONTENTS

ASSESSING STUDENT ACHIEVEMENT

Assessing Student Achievement in CTS G.5
Assessing Student Achievement in Information Processing G.7

Assessment Tools Generic to CTS

Basic Competencies Reference Guide G.8
Generic Rating Scale G.10

Frameworks for Assessment

CTSISS: Issue Analysis G.11
CTSLAB: Lab Investigations G.12
CTSNEG: Negotiation and Debate G.13
CTSPRE: Presentations/Reports G.14
CTSRES: Research Process G.15

Assessment Tools Generic to Information Processing Strand

INFCRT: Assessment Checklist: Correspondence, Reports, Tables G.16
INFDB: Assessment Checklist: Databases G.17
INFEPDOC: Assessment Checklist: Electronic Publishing Document Production G.18
INFEPSF: Assessment Checklist: Electronic Publishing Software Functions G.19
INFINTEG: Assessment Checklist: Software Integration 1, 2 and 3 ..... G.20
INFKEYNB: Reference Chart: Keyboarding and Numberpad Rates G.21
INFMMDOC: Assessment Checklist: Multimedia Productions and Presentations G.22
INFMMSF: Assessment Checklist: Multimedia Software Functions G.23
INFPRGM1: Assessment Checklist: Introductory and Intermediate Programming G.24
INFPRGM2: Assessment Checklist: Intermediate Programming G.25
INFPRGM3: Assessment Checklist: Advanced Programming Applications G.26
INFPSAM1: Programming: Sample Assignments 1A–3A G.27
INFPSAM2: Programming: Sample Assignments 4A/B–5A/B G.29
INFPSAM3: Programming: Sample Assignments PA1, 2, 3 ..... G.31
INFSPEC: Assessment Checklist: Specialization 1 and 2 ..... G.32
INFSS: Assessment Checklist: Spreadsheets G.33
INFTDENT: Assessment Checklist: Text–Data Entry G.34
INFWP: Assessment Checklist: Word Processing G.35
INFWRKSTN: Assessment Checklist: Workstation Routines and Management G.36

Assessment Tools Specific to Modules in the Information Processing Strand

INF1010–1: Assessment Checklist: A. File Management Procedures
B. Text/Data Entry
C. Computer Workstation Components G.37
INF1010–2: Assessment Guide: Presentations and Reports G.38
INF1090–1: Assessment Guide: Information Highway 1 ..... G.39
INF2010–1: Assessment Guide: Workstation Operations G.40
INF2140–1: Assessment Guide: Process Control Project G.41
INF2140–2: Process Control Sample Project G.42
INF2190–1: Assessment Checklist: Telecommunication Systems Use G.43

INF2190–2: Assessment Checklist: Telecommunication Systems Presentation/Report G.44
INF2190–3: Assessment Checklist: Telecommunication Systems Infrastructure Presentation/Report G.46
INF2200–1: Assessment Guide: Information Highway 2 .... G.47
INF3010–1: Presentations/Reports: Hardware/Software Analysis G.48
INF3020–1: Assessment Guide: Local Area Networks Project G.49
INF3080–1: Assessment Guide: Information Management Tools Project G.50
INF3140–1: Assessment Guide: Artificial Intelligence (AI) Project G.51
INF3140–2: Artificial Intelligence (AI) Sample Project G.52
INF3180–1: Assessment Checklist: Telecommunication Systems Infrastructure Presentation/Report G.54
INF3180–2: Assessment Checklist: Telecommunication Systems Infrastructure Presentation/Report G.55
INF3180–3: Assessment Checklist: Telecommunication Design Project G.56
INF3190–1: Assessment Guide: Information Highway 3 .... G.57
INF3200–1: Assessment Guide: Internet Services G.58

ASSESSING STUDENT ACHIEVEMENT IN CTS

The CTS assessment standards assess two basic forms of competency:

The CTS assessment standards assess two basic forms of competency:

- What can a student ***do***?
  - **make** a product (e.g., wood bowl, report, garment)
  - **demonstrate** a process
    - strand-related competencies (e.g., keyboarding, hair cutting, sewing techniques, lab procedures)
    - basic competencies (e.g., resource use, safety procedures, teamwork).

- What does a student ***know***?
  - knowledge base needed to demonstrate a competency (link theory and practice).

CTS Defines *Summative* Assessment Standards

The assessment standards and tools defined for the CTS modules, referenced in Sections D, E and F of this Guide, focus on the final (or summative) assessment of student achievement.

Assessment throughout the learning period (formative assessment) will continue to assess how students are progressing. Teachers direct and respond to students' efforts to learn—setting and marking tasks and assignments, indicating where improvement is needed, sending out interim reports, congratulating excellence, etc.

Teachers will decide which instructional and assessment strategies to apply during the formative learning period. As formative and summative assessment are closely linked, some teachers may wish to modify the tools included in this section to use during the instructional process. Teachers may also develop their own summative assessment tools as long as the standards are consistent with the minimum expectations outlined by Alberta Education.

Grading and Reporting Student Achievement

When a student can demonstrate ALL of the exit-level competencies defined for the module (module learner expectations), the teacher will designate the module as "successfully completed." The teacher will then use accepted grading practices to determine the percentage grade to be given for the module—a mark not less than 50%.

The time frame a teacher allows a student to develop the exit-level competency is a local decision. NOTE: The Senior High School Handbook specifies that students must have access to 25 hours of instruction for each credit. Students may, however, attain the required competencies in less time and may proceed to other modules.

Teachers are encouraged to consult their colleagues to ensure grading practices are as consistent as possible.

High school teachers may wish to refer to "Directions for Reporting Student Achievement in CTS" for information on how to use the CTS course codes to report credits students have earned to Alberta Education. (Copies of this document have been forwarded to superintendents and senior high school principals.)

Components of Assessment Standards in CTS

The following components are included in each module:

- **module learner expectations** (shaded left column of the module) define the exit-level competencies students are expected to achieve to complete a module. Each MLE defines and describes critical behaviours that can be measured and observed. The student must meet the standard specified for **ALL** MLEs within a module to be successful.

- **suggested emphasis** (right column of the module) provides a guideline for the relative significance of each MLE and can be used to organize for instruction.

- **conditions and criteria** (middle column of the module) set the framework for the assessment of student competency, specifying the minimum standard for performance and including a reference to assessment tools, where appropriate.

  Criteria define the behaviours that a student must demonstrate to meet the designated standard. For example, the criteria could describe the various techniques that must be demonstrated when using a tool, and/or describe the minimum components of a project the student must complete.

  Conditions outline the specifications under which a student's competency can be judged. For example, the conditions could specify whether the assessment should be timed or not, or if the student should be allowed to access to support resources or references.

  Standard may be defined by (1) assessment tools, which are referenced in this section (or sometimes in approved learning resources) and/or (2) "illustrative examples" of student work, if appropriate.

  Assessment Tools included in this section of the Guide tend to be of two types:

  - tools generic to a strand or to the entire CTS program; e.g., a standard 5-point rating scale is used in all strands. Other generic tools include assessing reports and presentations and lab safety checklists. *(Names of these tools include the strand code [e.g., "INF" for Information Processing] and a code for the type of tool [e.g., "TDENT" for Text-Data Entry].)*
  - tools specific to a module; e.g., assessment checklist for assessing a venture plan in Enterprise and Innovation or a checklist for sketching, drawing and modelling in Design Studies. *(Names of these tools include the module code; e.g., "INF1010–1" indicating that it is the first module-specific tool used in Information Processing Module 1010.)*

Development and Validation Processes

The "Criteria and Condition" and "Suggested Emphasis" columns have been validated, with extensive input from teachers, professional associations/contacts and post-secondary institutions. The goal is to prepare well-structured assessment standards and related assessment tools that:

- establish an appropriate level of challenge and rigour
- relate directly to the type of learning described in the curriculum standard
- are easy to understand
- are efficient to implement
- can provide a consistent measure of what was expected to be measured.

As students and teachers work with the assessment standards and tools, it is expected that levels of performance will increase as more and more students are able to achieve the minimum standard. Therefore, the assessment standards and related tools will continue to be monitored, and revised as necessary to ensure appropriate levels or rigour and challenge, and successful transitions for students as they leave high school and enter the workplace or related post-secondary programs.

ASSESSING STUDENT ACHIEVEMENT IN INFORMATION PROCESSING

Much of the assessment in Information Processing consists of gathering information about what a student knows and is able to do, and being able to compare those outcomes with the standards identified within the curriculum.

Assessing student performance in Information Processing values process as well as product. The focus is primarily on the student's ability to apply knowledge and skills related to using technology and producing documents and presentations rather than the simple acquisition of knowledge and skills.

Assessment Strategies and Tools

A variety of tools have been provided for your reference and use. In the development of the assessment materials there has been an attempt to keep it as simple as possible while also providing guidance and assistance to the teacher. The tools are intended to help you assess students' work as accurately and consistently as possible by stating standards of performance for elements felt to be important within the curriculum as a whole or in specific modules. They also provide standards for "basic competencies" students should be able to demonstrate while engaged in learning.

The tools that have been developed are intended to be used as summative assessment tools. Depending on the way the classroom is organized, they may be used when the student has indicated he or she is ready for the final assessment or by the entire class at the end of the learning period.

Tools Generic to Information Processing

In order to show the progression and continuity of learnings, most tools in Information Processing are generic to particular software applications or document productions. For example, the Assessment Checklist for Word Processing incorporates Word Processing 1, 2 and 3 modules. The progression from basic to advanced software function and document productions can be viewed collectively. The same design was used in the Applied Processing theme (e.g., INFCRT, INFDOCPR) to show the increasing importance of efficient productivity in work-related environments and articulation with related post-secondary programs. The Reference Chart for Keyboarding and Numberpad Rates (INFKEYNB) is to help create consistency around the province in the assessment of speed and accuracy skill development throughout the six keyboarding modules. The generic Information Processing tool for Workstation Routines and Management (INFWRKSTA) has been incorporated into all modules. It brings into context the basic competencies related to Information Processing.

Tools Specific to Information Processing

The tools that have been developed to assess specific MLEs in a module are labelled with the module number and the tool number; e.g., INF1010–2. They are referred to under the conditions and criteria section for each module.

The assessment tools outline the criteria for assessment and the minimum task performance rating using a five-point scale. These standards establish an appropriate level of performance and achievement for one or more module learner expectations.

A number of module-specific assessment tools have been developed around the frameworks generic to CTS and the strand. These tools identify basic as well as strand-specific skill sets such as:

- Planning and Management
- Information Gathering and Processing
- Presenting/Reporting
- Working Collaboratively.

Where appropriate "Illustrated Examples" or "Sample Assignments and Projects" have been developed to help establish realistic expectations and standards of achievement.

BASIC COMPETENCIES REFERENCE GUIDE

The chart below outlines basic competencies that students endeavour to develop and enhance in each of the CTS strands and modules. Students' basic competencies should be assessed through observations involving the student, teacher(s), peers and others as they complete the requirements for each module. In general, there is a progression of task complexity and student initiative as outlined in the Developmental Framework★. **As students progress through Stages 1, 2, 3 and 4 of this reference guide, they build on the competencies gained in earlier stages**. Students leaving high school should set themselves a goal of being able to demonstrate Stage 3 performance.

Suggested strategies for classroom use include:

- having students rate themselves and each other
- using in reflective conversation between teacher and student
- highlighting areas of strength
- tracking growth in various CTS strands
- highlighting areas upon which to focus
- maintaining a student portfolio.

Stage 1— *The student:*	**Stage 2**— *The student:*	**Stage 3**— *The student:*	**Stage 4**— *The student:*
Managing Learning			
☐ comes to class prepared for learning	☐ →	☐ →	☐ →
☐ follows basic instructions, as directed	☐ follows instructions, with limited direction	☐ follows detailed instructions on an independent basis	☐ →
	☐ sets goals and establishes steps to achieve them, with direction	☐ sets clear goals and establishes steps to achieve them	☐ demonstrates self-direction in learning, goal setting and goal achievement
☐ acquires specialized knowledge, skills and attitudes	☐ applies specialized knowledge, skills and attitudes in practical situations	☐ transfers and applies specialized knowledge, skills and attitudes in a variety of situations	☐ transfers and applies learning in new situations; demonstrates commitment to lifelong learning
☐ identifies criteria for evaluating choices and making decisions	☐ identifies and applies a range of effective strategies for solving problems and making decisions	☐ uses a range of critical thinking skills to evaluate situations, solve problems and make decisions	☐ thinks critically and acts logically to evaluate situations, solve problems and make decisions
☐ uses a variety of learning strategies	☐ explores and uses a variety of learning strategies, with limited direction	☐ selects and uses effective learning strategies	☐ →
		☐ cooperates with others in the effective use of learning strategies	☐ provides leadership in the effective use of learning strategies
Managing Resources			
☐ adheres to established timelines; uses time/schedules/planners effectively	☐ creates and adheres to timelines, with limited direction; uses time/schedules/planners effectively	☐ creates and adheres to detailed timelines on an independent basis; prioritizes task; uses time/schedules/planners effectively	☐ creates and adheres to detailed timelines; uses time/schedules/planners effectively; prioritizes tasks on a consistent basis
☐ uses information (material and human resources), as directed	☐ accesses and uses a range of relevant information (material and human resources), with limited direction	☐ accesses a range of information (material and human resources), and recognizes when additional resources are required	☐ uses a wide range of information (material and human resources) in order to support and enhance the basic requirement
☐ uses technology (facilities, equipment, supplies), as directed, to perform a task or provide a service	☐ uses technology (facilities, equipment, supplies), as appropriate, to perform a task or provide a service, with minimal assistance and supervision	☐ selects and uses appropriate technology (facilities, equipment, supplies) to perform a task or provide a service on an independent basis	☐ recognizes the monetary and intrinsic value of managing technology (facilities, equipment, supplies)
☐ maintains, stores and/or disposes of equipment and materials, as directed	☐ maintains, stores and/or disposes of equipment and materials, with limited assistance	☐ maintains, stores and/or disposes of equipment and materials on an independent basis	☐ demonstrates effective techniques for managing facilities, equipment and supplies
Problem Solving and Innovation			
☐ participates in problem solving as a process ☐ learns a range of problem-solving skills and approaches	☐ identifies the problem and selects an appropriate problem-solving approach, responding appropriately to specified goals and constraints	☐ thinks critically and acts logically in the context of problem solving	☐ identifies and resolves problems efficiently and effectively
☐ practices problem-solving skills by responding appropriately to a clearly defined problem, specified goals and constraints, by: – generating alternatives – evaluating alternatives – selecting appropriate alternative(s) – taking action	☐ applies problem-solving skills to a directed or a self-directed activity, by: – generating alternatives – evaluating alternatives – selecting appropriate alternative(s) – taking action	☐ transfers problem-solving skills to real-life situations, by generating new possibilities ☐ prepares implementation plans ☐ recognizes risks	☐ identifies and suggests new ideas to get the job done creatively, by: – combining ideas or information in new ways – making connections among seemingly unrelated ideas – seeking out opportunities in an active manner

BEST COPY AVAILABLE

Stage 1— *The student:*	**Stage 2**— *The student:*	**Stage 3**— *The student:*	**Stage 4**— *The student:*
Communicating Effectively			
☐ uses communication skills; e.g., reading, writing, illustrating, speaking	☐ communicates thoughts, feelings and ideas to justify or challenge a position, using written, oral and/or visual means	☐ prepares and effectively presents accurate, concise, written, visual and/or oral reports providing reasoned arguments	☐ negotiates effectively, by working toward an agreement that may involve exchanging specific resources or resolving divergent interests
☐ uses language in appropriate context	☐ uses technical language appropriately	☐ encourages, persuades, convinces or otherwise motivates individuals	☐ negotiates and works toward a consensus
☐ listens to understand and learn	☐ listens and responds to understand and learn	☐ listens and responds to understand, learn and teach	☐ listens and responds to understand, learn, teach and evaluate
☐ demonstrates positive interpersonal skills in selected contexts	☐ demonstrates positive interpersonal skills in many contexts	☐ demonstrates positive interpersonal skills in most contexts	☐ promotes positive interpersonal skills among others
Working with Others			
☐ fulfills responsibility in a group project	☐ →	☐ seeks a team approach, as appropriate, based on group needs and benefits; e.g., idea potential, variety of strengths, sharing of workload	☐ leads, where appropriate, mobilizing the group for high performance
☐ works collaboratively in structured situations with peer members	☐ cooperates to achieve group results	☐ works in a team or group: – encourages and supports team members – helps others in a positive manner – provides leadership/followership as required – negotiates and works toward consensus as required	☐ understands and works within the context of the group
☐ acknowledges the opinions and contributions of others in the group	☐ maintains a balance between speaking, listening and responding in group discussions ☐ respects the feelings and views of others		☐ prepares, validates and implements plans that reveal new possibilities
Demonstrating Responsibility			
Attendance			
☐ demonstrates responsibility in attendance, punctuality and task completion	☐ →	☐ →	☐ →
Safety			
☐ follows personal and environmental health and safety procedures	☐ recognizes and follows personal and environmental health and safety procedures	☐ establishes and follows personal and environmental health and safety procedures	☐ transfers and applies personal and environmental health and safety procedures to a variety of environments and situations
☐ identifies immediate hazards and their impact on self, others and the environment	☐ identifies immediate and potential hazards and their impact on self, others and the environment	☐ →	☐ →
☐ follows appropriate/emergency response procedures	☐ →	☐ →	☐ →
			☐ demonstrates accountability for actions taken to address immediate and potential hazards
Ethics			
☐ makes personal judgements about whether or not certain behaviours/actions are right or wrong	☐ assesses how personal judgements affect other peer members and/or family; e.g., home and school	☐ assesses the implications of personal/group actions within the broader community; e.g., workplace	☐ analyzes the implications of personal/group actions within the global context
			☐ states and defends a personal code of ethics as required

***Developmental Framework** • *Simple task* • *Structured environment* • *Directed learning*	• *Task with limited variables* • *Less structured environment* • *Limited direction*	• *Task with multiple variables* • *Flexible environment* • *Self-directed learning, seeking assistance as required*	• *Complex task* • *Open environment* • *Self-directed/self-motivated*

BEST COPY AVAILABLE

GENERIC RATING SCALE

SCALE	RUBRIC STATEMENT (included in assessment tool/statements in *italics* are optional) *The student:*	IS TASK/ PROJECT COMPLETED?	PROBLEM SOLVING: STUDENT INITIATIVE VS TEACHER DIRECTION/ SUPPORT	USE OF TOOLS, MATERIALS, PROCESSES	*STANDARDS OF QUALITY/ PRODUCTIVITY*	*TEAMWORK* *LEADERSHIP*	*SERVICE* *CLIENT/ CUSTOMER*
4	exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence. *Quality, particularly details and finishes, and productivity are consistent and exceed standards. Leads others to contribute team goals. Analyzes and provides effective client/customer services beyond expectations.*	Exceeds defined outcomes.	Plans and solves problems effectively and creatively in a self-directed manner.	Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.	*Quality, particularly details and finishes, and productivity are consistent and exceed standards.*	*Leads others to contribute team goals.*	*Analyzes and provides effective client/customer services beyond expectations.*
3	meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively. *Quality and productivity are consistent. Works cooperatively and contributes ideas and suggestions that enhance team effort. Analyzes and provides effective client/customer services.*	Meets defined outcomes.	Plans and solves problems in a self-directed manner.	Tools, materials and/or processes are selected and used efficiently and effectively.	*Quality and productivity are consistent.*	*Works cooperatively and contributes ideas and suggestions that enhance team effort.*	*Analyzes and provides effective client/customer services.*
2	meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately. *Quality and productivity are reasonably consistent. Works cooperatively to achieve team goals. Identifies and provides customer/client services.*	Meets defined outcomes.	Plans and solves problems with limited assistance.	Tools, materials and/or processes are selected and used appropriately.	*Quality and productivity are reasonably consistent.*	*Works cooperatively to achieve team goals.*	*Identifies and provides customer/client services.*
1	meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately. *Quality and productivity are reasonably consistent. Works cooperatively. Provides a limited range of customer/client services.*	Meets defined outcomes.	Follows a guided plan of action.	A limited range of tools, materials and/or processes are used appropriately.	*Quality and productivity are reasonably consistent.*	*Works cooperatively.*	*Provides a limited range of customer/client services.*
0	has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.	Has not completed defined outcomes.		Tools, materials and/or processes are used inappropriately.			

ASSESSMENT FRAMEWORK: ISSUE ANALYSIS

CTSISS

INTRODUCTORY	INTERMEDIATE	ADVANCED
The student:	*The student:*	*The student:*
Preparation and Planning • accurately describes an issue on which people disagree • poses an important question regarding the issue • accesses basic in-school/community information sources regarding the issue • uses one or more information-gathering techniques	**Preparation and Planning** • accurately describes an issue on which people disagree, explaining areas of disagreement • poses one or more thoughtful questions regarding the issue • accesses a range of relevant in-school/community resources • uses a range of information-gathering techniques	**Preparation and Planning** • accurately describes an issue on which people disagree, explaining specific causes of disagreement • poses thoughtful questions regarding the issue • accesses a range of relevant information sources and recognizes when additional information is required • demonstrates resourcefulness in collecting data
Analyzing Perspectives • clarifies different points of view regarding the issue; *e.g., social, economic, environmental* • states a position on the issue and logical reasons for adopting that position • states an opposing position on the issue and logical reasons for adopting that position • identifies sources of conflict among different positions • distinguishes between fact and fiction/opinion/theory	**Analyzing Perspectives** • categorizes different points of view regarding the issue; *e.g., cultural, ethical, economic, environmental, health-related* • states a position on the issue and logical reasons for adopting that position • states two or more opposing positions on the issue and logical reasons for adopting each position • describes interrelationships among different perspectives/ points of view • determines accuracy/currency/reliability of information and ideas	**Analyzing Perspectives** • categorizes different points of view regarding the issue; *e.g., cultural, ethical, economic, environmental, health-related, scientific, political* • states a position on the issue and insightful reasons for adopting that position • states three or more opposing positions on the issue and thoughtful reasons for adopting each position • analyzes interrelationships among different perspectives/ points of view • recognizes underlying bias/assumptions/values in information and ideas
Collaboration and Teamwork • shares work appropriately among group members • respects the views of others	**Collaboration and Teamwork** • shares work appropriately among group members • respects and considers the views of others • negotiates solutions to problems	**Collaboration and Teamwork** • shares work appropriately among group members • respects and considers the views of others • negotiates with sensitivity solutions to problems
Evaluating Choices/Making Decisions • identifies useful alternatives regarding the issue • establishes criteria for assessing each alternative; *e.g., social, economic, environmental* • selects an appropriate alternative based on established criteria • reflects on strengths/weaknesses of decisions by considering consequences • communicates information in a logical sequence to justify choices/decisions made	**Evaluating Choices/Making Decisions** • identifies important and appropriate alternatives regarding the issue • establishes knowledge- and value-based criteria for assessing each alternative; *e.g., social, economic, environmental* • selects an appropriate alternative by showing differences among choices • assesses strengths/weaknesses of decisions by considering consequences • communicates ideas in a logical sequence with supporting detail to justify choices/decisions made	**Evaluating Choices/Making Decisions** • describes in detail important and appropriate alternatives regarding the issue • establishes knowledge- and value-based criteria for assessing each alternative; *e.g., social, economic, environmental* • selects an appropriate and useful alternative by showing differences among choices • assesses strengths/weaknesses of decisions by considering consequences and implications • communicates thoughts/feelings/ideas clearly to justify choices/decisions made

ASSESSMENT FRAMEWORK: LAB INVESTIGATIONS CTSLAB

INTRODUCTORY	INTERMEDIATE	ADVANCED
The student:	*The student:*	*The student:*
Management • prepares self for task • organizes and works in an orderly manner • carries out instructions accurately • uses time effectively	**Management** • prepares self for task • organizes and works in an orderly manner • interprets and carries out instructions accurately • plans and uses time effectively • adheres to routine procedures	**Management** • prepares self for task • organizes and works in an orderly manner • interprets and carries out instructions accurately • plans and uses time effectively in a logical sequence • displays leadership in adhering to routine procedures • attempts to solve problems prior to requesting help
Teamwork • cooperates with group members • shares work appropriately among group members	**Teamwork** • cooperates with group members • shares work appropriately among group members • negotiates solutions to problems	**Teamwork** • cooperates with group members • shares work appropriately among group members • negotiates with sensitivity solutions to problems • displays effective communication skills
Use of Equipment and Materials • selects and uses appropriate equipment/materials • follows safe procedures/techniques • weighs and measures accurately • returns clean equipment/materials to storage areas	**Use of Equipment and Materials** • selects and uses appropriate equipment/materials • models safe procedures/techniques • weighs and measures accurately • practises proper sanitation procedures • minimizes waste of materials • advises of potential hazards and necessary repairs	**Use of Equipment and Materials** • selects and uses equipment/materials independently • demonstrates concern for safe procedures/techniques • weighs and measures accurately and efficiently • practises proper sanitation procedures • minimizes waste of materials • anticipates potential hazards and emergency response
Investigative Techniques • gathers and applies information from at least one source • makes predictions that can be tested • sets up and conducts experiments to test a prediction • distinguishes between manipulated/responding variables • obtains results that can be used to determine if some aspect of the prediction is accurate • summarizes important experimental outcomes	**Investigative Techniques** • gathers and applies information from a variety of sources • makes predictions that can be tested • plans, sets up and conducts experiments to test a prediction • identifies and explains manipulated/responding variables • obtains accurate results that confirm/reject the prediction • summarizes and applies experimental outcomes	**Investigative Techniques** • uses relevant information to explain observations • makes predictions that can be tested • plans, sets up and conducts experiments to test a prediction • analyzes relationships among manipulated/responding variables • obtains accurate results that confirm/reject prediction and answer related questions • summarizes, applies and evaluates experimental outcomes

ASSESSMENT FRAMEWORK: NEGOTIATION AND DEBATE CTSNEG

INTRODUCTORY	INTERMEDIATE	ADVANCED
The student:	*The student:*	*The student:*
Preparation and Planning	**Preparation and Planning**	**Preparation and Planning**
• accurately describes an issue on which people disagree	• accurately describes an issue on which people disagree, explaining areas of disagreement	• accurately describes an issue on which people disagree, explaining specific causes of disagreement
• poses an important question regarding the issue	• poses one or more thoughtful questions regarding the issue	• poses thoughtful questions regarding the issue
• accesses basic in-school/community information sources regarding the issue	• accesses a range of relevant in-school/community resources	• accesses a range of relevant information sources and recognizes when additional information is required
• uses one or more information-gathering techniques	• uses a range of information-gathering techniques	• demonstrates resourcefulness in collecting data
Analyzing Perspectives	**Analyzing Perspectives**	**Analyzing Perspectives**
• states a position on the issue and logical reasons for adopting that position	• states a position on the issue and logical reasons for adopting that position	• states a position on the issue and insightful reasons for adopting that position
• explains why the issue is important by presenting examples of possible consequences	• explains why the issue is important by presenting examples of possible consequences	• explains why the issue is important by presenting examples of possible consequences and implications
• clarifies different points of view regarding the issue; *e.g., social, economic, environmental*	• categorizes different points of view regarding the issue; *e.g., cultural, ethical, economic, environmental, health-related*	• categorizes different points of view regarding the issue; *e.g., cultural, ethical, economic, environmental, health-related, scientific, political*
• distinguishes between fact and fiction/opinion/theory	• determines accuracy/currency/reliability of information and ideas	• recognizes underlying bias/assumptions/values in information and ideas
Collaboration and Teamwork	**Collaboration and Teamwork**	**Collaboration and Teamwork**
• works with a range of peer members	• works with a range of peer members	• works with a wide range of peer members
• shares information/opinions/suggestions through group discussion	• shares information/opinions/suggestions, maintaining a balance between speaking and listening	• shares information/opinions/suggestions, maintaining a balance between speaking and listening
• listens to and respects the views of others	• listens to and respects the views of others, requesting clarification as necessary from other group members	• listens to and respects the views of others, requesting clarification as necessary from other group members
Negotiating and Debating	**Negotiating and Debating**	**Negotiating and Debating**
• presents a convincing argument in logical sequence supporting a position adopted on the issue	• presents a convincing argument in logical sequence supporting a position adopted, conveying points in order of importance	• presents a convincing argument in logical sequence supporting a position adopted, conveying points in order of importance and backing each with sound evidence
• provides a relevant response to opposing arguments	• provides a relevant and convincing response to opposing arguments	• provides a relevant and convincing rebuttal to opposing arguments
• speaks clearly so the argument can be understood	• speaks clearly without hesitation so the argument can be understood	• speaks clearly without hesitation so the argument can be understood by all listeners
• establishes a shared understanding of key alternatives and consequences relevant to the issue	• negotiates a shared agreement on preferred alternatives relevant to the issue	• negotiates a shared agreement on preferred alternatives by resolving divergent points of view

INTRODUCTORY	INTERMEDIATE	ADVANCED
The student:	*The student:*	*The student:*
Preparation and Planning	**Preparation and Planning**	**Preparation and Planning**
• sets goals and follows instructions accurately	• sets goals and describes steps to achieve them	• sets goals and describes steps to achieve them
• responds to directed questions and follows necessary steps to find answers	• uses personal initiative to formulate questions and find answers	• uses personal initiative to formulate questions and find answers
• accesses basic in-school/community information sources	• accesses a range of relevant in-school/community resources	• accesses a range of relevant information sources and recognizes when additional information is required
• interprets and organizes information into a logical sequence	• interprets, organizes and combines information into a logical sequence	• interprets, organizes and combines information in creative and thoughtful ways
• records information accurately, using correct technical terms	• records information accurately with appropriate supporting detail and using correct technical terms	• records information accurately, using appropriate technical terms and supporting detail
• uses time effectively	• plans and uses time effectively	• plans and uses time effectively, prioritizing tasks on a consistent basis
	• gathers and responds to feedback regarding approach to task and project status	• assesses and refines approach to task and project status based on feedback and reflection
Presentation	**Presentation**	**Presentation**
• demonstrates effective use of at least one medium of communication: *e.g.,* ***Written:*** *spelling, punctuation, grammar, basic format* ***Oral:*** *voice projection, body language* ***Audio-Visual:*** *techniques, tools*	• demonstrates effective use of at least two communication media: *e.g.,* ***Written:*** *spelling, punctuation, grammar, format (formal/informal)* ***Oral:*** *voice projection, body language, appearance* ***Audio-Visual:*** *techniques, tools, clarity*	• demonstrates effective use of a variety of communication media: *e.g.,* ***Written:*** *spelling, punctuation, grammar, format (formal/informal, technical/literary)* ***Oral:*** *voice projection, body language, appearance, enthusiasm, evidence of prior practice* ***Audio-Visual:*** *techniques, tools, clarity, speed and pacing*
• uses correct grammatical convention and technical terms through proofreading/editing	• maintains acceptable grammatical and technical standards through proofreading and editing	• maintains acceptable grammatical and technical standards through proofreading and editing
• provides an introduction that describes the purpose of the project	• provides an introduction that describes the purpose and scope of the project	• provides an introduction that describes the purpose and scope of the project
• communicates information in a logical sequence	• communicates ideas into a logical sequence with sufficient supporting detail	• communicates thoughts/feelings/ideas clearly to justify or challenge a position
• states a conclusion based on a summary of facts	• states a conclusion by synthesizing the information gathered	• states a conclusion by analyzing and synthesizing the information gathered
• provides a reference list of three or more basic information sources	• provides a reference list that includes five or more relevant information sources	• gives evidence of adequate research through a reference list including seven or more relevant information sources

©Alberta Education, Albe Canada

ASSESSMENT FRAMEWORK: RESEARCH PROCESS CTSRES

INTRODUCTORY	INTERMEDIATE	ADVANCED
The student:	*The student:*	*The student:*
Preparation and Planning • sets goals and follows instructions accurately • adheres to established timelines • responds to directed questions and follows necessary steps to find answers • uses time effectively	**Preparation and Planning** • sets goals and establishes steps to achieve them • creates and adheres to useful timelines • uses personal initiative to formulate questions and find answers • plans and uses time effectively	**Preparation and Planning** • sets clear goals and establishes steps to achieve them • creates and adheres to detailed timelines • uses personal initiative to formulate questions and find answers • plans and uses time effectively, prioritizing tasks on a consistent basis
Information Gathering and Processing • accesses basic in-school/community information sources • uses one or more information-gathering techniques • interprets and organizes information in a logical sequence • records information accurately, using correct technical terms • distinguishes between fact and fiction/opinion/theory • responds to feedback when current approach is not working	**Information Gathering and Processing** • accesses a range of relevant in-school/community resources • uses a range of information-gathering techniques • interprets, organizes and combines information into a logical sequence • records information accurately with appropriate supporting detail and using correct technical terms • determines accuracy/currency/reliability of information sources • gathers and responds to feedback regarding approach to the task	**Information Gathering and Processing** • accesses a range of relevant information sources and recognizes when additional information is required • demonstrates resourcefulness in collecting data • interprets, organizes and combines information in creative and thoughtful ways • records information accurately with appropriate supporting detail and using correct technical terms • recognizes underlying bias/assumptions/values in information sources • assesses and refines approach to the task and project status based on feedback and reflection
Collaboration and Teamwork • cooperates with group members • shares work appropriately among group members	**Collaboration and Teamwork** • cooperates with group members • shares work appropriately among group members • negotiates solutions to problems	**Collaboration and Teamwork** • cooperates with group members • shares work appropriately among group members • negotiates with sensitivity solutions to problems • displays effective communication and leadership skills
Information Sharing • demonstrates effective use of one or more communication media; *e.g., written, oral, audio-visual* • communicates information in a logical sequence • uses correct grammatical convention and technical terms • cites three or more basic information sources	**Information Sharing** • demonstrates effective use of two or more communication media; *e.g., written, oral, audio-visual* • communicates ideas in a logical sequence with sufficient supporting detail • maintains acceptable grammatical and technical standards • cites five or more relevant information sources	**Information Sharing** • demonstrates effective use of a variety of communication media; *e.g., written, oral, audio-visual* • communicates thoughts/feelings/ideas clearly to justify or challenge a position • maintains acceptable grammatical and technical standards • gives evidence of adequate information gathering by citing seven or more relevant information sources

ASSESSMENT CHECKLIST: CORRESDONDENCE, REPORTS, TABLES INFCRT

STUDENT: ______________________________ MODULE: INF ____________________

STANDARD Rating of 2	Students working **at standard** must demonstrate preparation of mailable documents (no errors in text and well formatted), under time constraints appropriate for complexity of task, based on unformatted sources by the end of the learning period. The minimum expected keyboarding competence for time constraint purposes is 30 wpm (Keyboarding 2 standard). Keyboarding 3 is recommended as a corequisite to these modules. The **at standard** level of competency for these intermediate level modules is 2. The scale at the bottom defines the different levels of competencies.

Correspondence (INF2090)

Formatting of Correspondence:

- ☐ designs and creates templates/macros/autotext for a variety of correspondence (e.g., letterhead, closing letter/punctuation styles, form letters, memorandums)
- ☐ produces letters in a variety of styles from unformatted sources including use of all basic letter parts plus:
  - mailing and special notations
  - attention lines/subject lines
  - displayed information (enumerations, quotes, tables)
  - enclosure/copy notations
  - second page headings
- ☐ merges form letters with multiple records
- ☐ produces memorandums from unformatted sources
- ☐ edits/reformats existing documents
- ☐ produces and prints sets of labels
- ☐ produces and prints envelopes according to current Canada Post Corporation guidelines, include mailing/special notations and attention lines
- * in lieu of printing, send documents to teacher through electronic mail as an attachment

Document Editing - enhances the quality of documents and insures all documents are mailable (no errors in text) and well formatted through the use of:

- ☐ spell check and/or grammar check
- ☐ thesaurus
- ☐ proofreading skills
- ☐ appropriate document format and aesthetically pleasing

Reports (INF2100)

Formatting of Reports:

- ☐ designs and creates templates/macros/autotext for a variety of reports (e.g., bound, unbound, multicolumn, formal, informal, APA, MLA)
- ☐ produces reports from unformatted sources including the following features:
  - title pages
  - titles/headings/subheading/sideheadings
  - table of contents
  - outlines
  - display paragraphs/quotes
  - multicolumns
  - charts and/or tables
  - headers/footers
  - page numbering
  - citations (footnotes, endnotes, within body)
  - reference lists and/or bibliographies
  - appendices (i.e., enumerated summary, charts, tables)
  - index
- ☐ edits/reformats existing documents
- * in lieu of printing, send documents to teacher through electronic mail as an attachment

Document Editing - enhances the quality of documents and insures all documents are mailable (no errors in text) and well formatted through the use of:

- ☐ spell check and/or grammar check
- ☐ thesaurus
- ☐ proofreading skills
- ☐ appropriate document format and aesthetically pleasing

Tables/Forms (INF2110)

Formatting of Tables:

- ☐ designs and creates templates/macros/autotext for a variety of multicolumn tables
- ☐ produces tables from unformatted sources including the following features:
  - headings/subheadings (multiline)
  - borders/shading
  - cell attributes (e.g., fonts, alignments)
  - math calculations
  - table sorts
  - supplemental data (e.g., footnotes)
  - special options/features (e.g., sort, split/join cells)
  - decimal alignment
  - dot leaders
- ☐ edits/reformats existing documents
- ☐ designs and creates templates for a variety of business forms such as:
  - invoices/credit memos
  - purchase requisition/orders
  - statements of account
  - employee applications
  - FAX cover sheets
- ☐ uses templates to fill out a variety of business forms

Document Editing - enhances the quality of documents and insures all documents are mailable (no errors in text) and well formatted through the use of:

- ☐ spell check and/or grammar check
- ☐ thesaurus
- ☐ proofreading skills
- ☐ appropriate document format and aesthetically pleasing

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: DATABASES	**INFDB**

STUDENT: ____________________ MODULE: INF ____________________

STANDARD	Students working **at standard** must demonstrate problem-solving techniques through the use of software functions noted in the checklists below and in the preparation of well-designed and accurate records and reports. The columns to the left of the checklists indicate the minimum competency level for **at standard** performance for the introductory and intermediate level,modules. The scale at the bottom defines the different levels of competencies. Note: The list of software functions indicated by an asterisk {*} may need to be adjusted to reflect software that is available.

At Standard	*Introductory Level (INF1050)*	At Standard	*Intermediate Level (INF2070)*
1	**Solves Problems with Databases** ☐ define problem ☐ plan, design and create databases to solve problems and make decisions ☐ present data visually through the creation of reports ☐ analyze data to draw conclusions and make recommendations ☐ cite references where appropriate	2	**Solves Problems with Databases** ☐ define problem ☐ plan, design and create databases to solve problems and make decisions ☐ present data visually through the creation of reports ☐ analyze data to draw conclusions and make recommendations ☐ cite references where appropriate
1	**Format Functions for Creating Records/Forms:** ☐ create fields and records using form/list view ☐ specify size of fields ☐ enter information into fields: – labels (text) – numbers, dates, time – formulas ☐ create calculated field ☐ use tab to move around a record ☐ work with multiple records in different views ☐ align fields: left, right, centre ☐ text styles: bold, underscore, italics, ☐ font types/sizes ☐ format numbers: %, $, commas, decimals ☐ highlight fields/forms/cells ☐ page and margin settings ☐ footers/headers/page numbering ☐ help function ☐ preview/print records in form and list view ☐ preview/print records in portrait and landscape	2	**Format Functions for Creating Records/Forms:** ☐ continue use of all software functions in introductory level ☐ view several part of database at same time in list view ☐ insert/move/remove a split ☐ page break in form and list view ☐ protect a database: unlock and lock fields/form design ☐ use template function ☐ merge and or link with two or more databases
1	**File/Edit/Proofread/Manipulate Functions** ☐ move around database (cursors, go to, select, home, end, page up/down, *scroll bar/arrows) ☐ create/update/recall/rename files ☐ locate specific records in a file ☐ modify records: insert/delete/adjust – fields (e.g., name, size) – field entries (text, numbers, dates) – font types/sizes – text styles and field alignments ☐ copy/move/paste within a database ☐ sort alphabetically, numerically and chronologically ☐ search/query a database to find – selected records that match – selected records that are above or below values – selected records with a specific alphabetic or numeric range	2	**File/Edit/Proofread/Manipulate Functions** ☐ continue use of all software functions from introductory level ☐ insert/delete manual page breaks ☐ change headers/footers/page numbers ☐ search databases to find: – selected records that meet several conditions (and/or) – selected records that do not match a specific condition – use mathematical operators/functions to query – use wildcards in a query – use dates in a query
1	**Format Functions for Creating Reports** ☐ title reports ☐ select fields for a report ☐ calculate statistics in rows, columns, for entire report ☐ sort reports in alphabetic, numeric and chronological order ☐ search for selected records for a report ☐ modify reports: add/delete/adjust – fields and records – titles, headings, – text, numbers, dates – column width – font types and sizes, text and numbers ($,%, .) – text styles and field alignments ☐ save/delete/preview/print reports	2	**Format Functions for Creating Reports** ☐ continue use of all software functions at the introductory level ☐ create and use macros ☐ merge databases with other documents

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: ELECTRONIC PUBLISHING DOCUMENT PRODUCTION INFEPDOC

STUDENT: ____________________ MODULE: INF ____________________

STANDARD	Students working **at standard** must demonstrate preparation of well-designed publications with no errors in text and including all features noted below based on reproductions and original creations. The column to the left of the checklists indicates the **at standard** level of competencies at the introductory, intermediate and advanced levels. The rating scale at the bottom defines the different levels of competencies.

At Standard	*Introductory Level-GT 1*	At Standard	*Intermediate Level - EP 1*	At Standard	*Advanced Level - EP 2*
1	**Plans Drawings:** ☐ gathers information regarding: • audience • image to project • purpose • message to be conveyed • length ☐ prepares a thumbnail sketch ☐ makes decisions regarding types of text, graphics and artwork	2	**Plans Publications:** ☐ gathers information regarding: • audience • image to project • purpose • message to be conveyed • length ☐ prepares a thumbnail sketch ☐ makes decisions regarding types of text, graphics and artwork	3	**Plans Publications:** ☐ gathers information regarding: • audience • image to project • purpose • message to be conveyed • length ☐ prepares a thumbnail sketch ☐ makes decisions regarding types of text, graphics and artwork
1	**Reproduces a minimum of three one-page drawings containing:** ☐ basic page layout principles (e.g., optical centre, balance, white space) ☐ text ☐ basic text enhancements ☐ graphic images (e.g., paint, draw and import clipart) ☐ foreground/background ☐ filled/colour graphic images ☐ preview and print drawings **Creates a minimum of three original one-page drawings containing:** ☐ basic page layout principles (e.g., optical centre, balance, white space) ☐ text ☐ basic text enhancements ☐ graphic images (e.g., paint, draw and import clip art ☐ foreground/background) ☐ filled/colour graphic images ☐ preview and print drawings	2	**Page Layout and Design of Publications:** ☐ reproduces a minimum of three one- and two-page publications containing: • text (display and body) • graphics and/or artwork (use of scanning and clip art files) • basic text and graphic enhancement (e.g., typefaces, styles, kerning, leading, cropping, fills, rotating text and images) • preview, print and if required reproduce publications ☐ creates a minimum of three one- and two-page original publications containing: • text (display and body) • graphics and/or artwork • text and graphic enhancements (e.g. typefaces, styles, kerning, leading, cropping, fills, rotating text and images) • preview and print publications ☐ follows copyright laws ☐ continues to use effective page layout principles from introductory level ☐ uses additional page layout principals such as: • use of columns • the Z pattern • contrast • rhythm • unity	3	**Page Layout and Design of Publications:** ☐ creates a minimum of three multipage original publications containing: • style sheets or templates • trim size, bleed • text (display and body) • graphics and artwork (graphic tools, scanning and clip art files) • a variety of advanced publication enhancements such as: – pull quotes, sidebars/footnotes – vertical column division lines, – two-page spread graphic – mastheads and banners • preview, print and if necessary reproduce publication ☐ follows copyright laws ☐ continues to use effective page layout principles from introductory and intermediate levels ☐ uses additional page layout principles such as: • proportion • colour • golden section
1	**Proofreads and Edits Drawings:** ☐ spelling, grammar, facts, graphics ☐ hyphenation, punctuation ☐ page layout and alignment ☐ consistency	2	**Proofreads and Edits Publications:** ☐ spelling, grammar, facts, graphics ☐ hyphenation, punctuation ☐ page layout and alignment ☐ consistency	3	**Proofreads and Edits Publications:** ☐ spelling, grammar, facts, graphics ☐ hyphenation, punctuation ☐ page layout and alignment ☐ consistency

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

©Alberta Education, Alb Canada

BEST COPY AVAILABLE

ASSESSMENT CHECKLIST: ELECTRONIC PUBLISHING SOFTWARE FUNCTIONS **INFEPSF**

STUDENT: ______________________________ MODULE: INF ____________________

STANDARD	Students working **at standard** must demonstrate appropriate use of the software functions as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for **at standard** performance for the introductory, intermediate and advanced level modules. The rating scale at the bottom defines the different levels of competencies. Note: The list of software functions indicated by an asterisk {*} may need to be adjusted to reflect software that is available.

At Standard	*Introductory Level - Graphic Tools*	At Standard	*Intermediate Level - EP 1*	At Standard	*Advanced Level - EP 2*
1	**Format Functions for Creating Drawings:** ☐ determines the size of draw area ☐ moves around in a draw area: • page up/down • cursor • scroll bars • mouse ☐ enlarge the draw area ☐ enter text ☐ type styles (e.g., bold, underscore, italics, shadow, outline) ☐ font styles/sizes ☐ scan graphic images ☐ import graphics ☐ help function ☐ preview/print drawing	2	**Format Functions for Creating Publications:** ☐ page layout grid: multicolumns, margins ☐ page numbering, headers, footers ☐ enter display and body text within a DTP program ☐ import text ☐ text alignment: left, right, centre, full justified ☐ text wrap ☐ indent/block paragraphs ☐ tabs: left, right, decimal, centre ☐ typestyles: bold, underscore, italics, reverse type ☐ typefaces and font sizes ☐ kerning/leading ☐ rotate text and images ☐ text block (create and manipulate) ☐ preview/print publications (landscape, portrait) ☐ import clipart/scale and crop image ☐ scan/insert images ☐ create captions/dropped or raised capitals	3	**Format Functions for Creating Publications:** ☐ continue to use all format functions from intermediate level ☐ create style sheets and/or master pages ☐ create templates ☐ use styles palette (e.g., captions, headlines, body, text) ☐ use story editor ☐ enhance a publication's format using: • pull quotes • sidebars and footnotes • vertical column division lines • two-page spread graphic • create mastheads and banners ☐ print composite and colour separations
1	**Paint and Draw Tools** - makes use of: ☐ application tools (e.g., select, text) ☐ draw tools (e.g., line, box, circle) ☐ paint tools ☐ fill palettes ☐ line palettes	2	**Tools** - makes use of: ☐ line tools (e.g., square and circle tools) ☐ fill shades, patterns and drop shadowing ☐ layering graphic objects ☐ line draw thickness and other attributes ☐ view function	3	**Tools** ☐ continues to use all tools from intermediate level
1	**Proofread/Edit Functions** ☐ create/update/open/ ☐ rename files ☐ backspace/undo ☐ select/define a cutout ☐ cut, paste, move ☐ cropping ☐ zoom in/out ☐ edit using erasers ☐ edit colours ☐ delete/insert text ☐ resizing ☐ repositioning	2	**Proofread/Edit Functions** ☐ spell/grammar checks ☐ change typefaces and typestyles ☐ select/insert/delete text and graphics ☐ copy and paste text ☐ edit line draw/graphic shapes (e.g., stretch, change thickness, reposition, copy to another location, delete/erase a line draw)	3	**Proofread/Edit Functions** ☐ spell/grammar checks ☐ change typefaces and typestyles ☐ select/insert/delete text and graphics ☐ copy and paste text ☐ edit line draw/graphic shapes (e.g., stretch, change thickness, reposition, copy to another location, delete/erase a line draw)

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

BEST COPY AVAILABLE

ASSESSMENT CHECKLIST: SOFTWARE INTEGRATION 1, 2 AND 3	**INFINTEG**

STUDENT: ______________________________ **MODULE: INF** ________

STANDARD	Students working **at standard** must demonstrate preparation of mailable documents (no errors in text or format) based on unformatted sources. Advanced level modules require students to demonstrate workplace competencies by working under time constraints appropriate for the level of complexity of task. The column to left of the checklists indicate the minimum competency level for **at standard** performance for the intermediate and advanced level modules. The scale at the bottom defines the different levels of competencies.

At Standard	*Document Production 1 (INF2120)*	*At Standard*	*Document Production 2 (INF3120)*	*At Standard*	*Word Processing Applications (INF3090)*
1	**Integrated Project** ☐ **Creates documents** – produces two- to three-page document(s) from unedited, unformatted sources that integrate data, text and graphics. Documents should make use of two of the following types of software: • word processing • database • spreadsheets including chart graphing • graphics (paint and draw, clipart files)	2	**Integrated Project** ☐ **Creates documents** – produces four- to ten-page document(s) from unedited, unformatted sources that integrate and link; e.g., OLE subscribe/publish data, text and graphics. Documents should make use of at least three of the following types of software: • word processing • database • spreadsheets including chart graphing • graphics (paint and draw, clipart files)	3	**Integrated Project** ☐ **Creates documents** – produces a multi-page (more than 10 pages) document(s) from unedited, unformatted sources that integrate and link; e.g., OLE subscribe/publish word processing, spreadsheet, database and graphics
1	☐ **Document Editing –** enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of: • spell check and/or grammar check • thesaurus • proofreading skills • elements and principles of design • appropriate document formats • aesthetically pleasing	2	☐ **Document Editing –** enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of: • spell check and/or grammar check • thesaurus • proofreading skills • elements and principles of design • appropriate document formats • aesthetically pleasing	3	☐ **Document Editing –** enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of: • spell check and/or grammar check • thesaurus • proofreading skills • elements and principles of design • appropriate document formats • aesthetically pleasing

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

©Alberta Education, Alb[illegible], Canada

REFERENCE CHART: KEYBOARDING AND NUMBERPAD RATES INFKEYNB

Module	Keyboarding Rate		Number Pad Rate	
	*WPM	Weighting	**KPM	Weighting
INF1020 Keyboarding 1 text - 1 min. *SI ≤ 1.2 numeric – 1 min. 1-3 digits max. 1 error	20	20/30	80-83	6/10
	21-22	22/30	84-87	7/10
	23-24	24/30	88-91	8/10
	25-26	26/30	92-95	9/10.
	27	28/30	96-97	10/10
	28	29/30		
	29	30/30		
INF2030 Keyboarding 2 text – 2 mins. *SI ≤ 1.25 numeric – 1 min. 1-3 digits max. 1 error	30	32/50	100-103	6/10
	31	34/50	104-107	7/10
	32	36/50	108/111	8/10
	33	38/50	112-115	9/10
	34	40/50	116-118	10/10
	35	42/50		
	36	44/50		
	37	46/50		
	38	48/50		
	39	50/50		
INF2040 Keyboarding 3 text – 2 mins. *SI 1.2-1.35 numeric – 1 min. 1-4 digits max. 1 error	40	32/50	120-125	6/10
	41	34/50	126-131	7/10
	42	36/50	132-137	8/10
	43	38/50	138-143	9/10
	44	40/50	144-148	10/10
	45	42/50		
	46	44/50		
	47	46/50		
	48	48/50		
	49	50/50		

Module	Keyboarding Rate		Number Pad Rate	
	*WPM	Weighting	**KPM	Weighting
INF3030 Keyboarding 4 text – 3 mins. *SI 1.3-1.4 numeric – 1 min. 1-5 digits max. 1 error	50	32/50	150-155	6/10
	51	34/50	156-161	7/10
	52	36/50	162-167	8/10
	53	38/50	168-173	9/10
	54	40/50	174-178	10/10
	55	42/50		
	56	44/50		
	57	46/50		
	58	48/50		
	59	50/50		
INF3040 Keyboarding 5 text – 3 mins. *SI ≥ 1.35 numeric – 1 min. 1-6 digits max. 1 error	60	32/50	180-183	12/20
	61	34/50	184-187	14/20
	62	36/50	188-191	16/20
	63	38/50	192-195	18/20
	64	40/50	196-198	20/20
	65	42/50		
	66	44/50		
	67	46/50		
	68	48/50		
	69	50/50		
INF3050 Keyboarding 6 text – 3 mins. *SI ≥ 1.35 numeric – 1 min. 1-6 digits max. 1 error	70	32/50	200-203	12/20
	71	34/50	204-207	14/20
	72	36/50	208-211	16/20
	73	38/50	212-215	18/20
	74	40/50	216-219	20/20
	75	42/50		
	76	44/50		
	77	46/50		
	78	48/50		
	79	50/50		

- Note that SI stands for syllabic intensity, which identifies the level of difficulty of a timing (e.g., SI 1.2 indicates the timing has words that average 1.2 syllables in length). The lower the SI the easier the timing. Reference to SI is normally listed at the bottom or top of a timing.

* (WPM)Words per minute

** (KPM)Keystrokes per minute

ASSESSMENT CHECKLIST: MULTIMEDIA PRODUCTIONS AND PRESENTATIONS **INFMMDOC**

STUDENT: ________________________________ MODULE: INF ____________________

STANDARD	Students working **at standard** must demonstrate preparation of well-designed productions/presentations including all features noted below based on edited and original creations. The column to the left of the checklists indicate the **at standard** level of competencies at the introductory, intermediate and advanced levels. The rating scale at the bottom defines the different levels of competencies.

At Standard	*Introductory Level (INF1070)*	At Standard	*Intermediate Level (INF2130)*	At Standard	*Advanced Level (INF3130)*
1	**Planning** ☐ prepares a storyboard outlining the presentation ☐ makes decisions regarding text, sound, graphics and animation ☐ chooses and uses appropriate tools, commands and devises	2	**Planning** ☐ prepares a storyboard that outlines a one-minute presentation that contains content and special effects ☐ makes decisions regarding text, sound, graphics video and animation ☐ chooses and uses appropriate tools, commands and devises	3	**Planning** ☐ prepares a storyboard that contains content and special effects ☐ makes decisions regarding text, sound, graphics video and animation ☐ chooses and uses appropriate tools, commands and devises
1	**Production of Presentation** ☐ collects required resources ☐ follows storyboard during production process ☐ produces presentation using appropriate tools	2	**Production of Presentation** ☐ produces a one-minute presentation that contains text, graphics, sound, video and animation. ☐ follows accepted principles of layout and design ☐ imports and modifies text material ☐ imports and modifies graphics ☐ imports and modifies video clips ☐ imports and modifies audio clips ☐ imports and modifies animation ☐ follows copyright laws	3	**Production of Presentation** ☐ produces an **original** presentation that contains text, graphic, sound, video and animation. ☐ follows accepted principles of layout and design ☐ imports original text ☐ imports original graphic ☐ imports original audio clips ☐ imports original video clips ☐ imports original animation ☐ follows copyright laws
1	**Edit and Testing** ☐ checks spelling, facts, graphics ☐ tests program links to make sure they work appropriately ☐ edits to enhance technical quality	2	**Edit and Testing** ☐ checks spelling, facts, graphics ☐ tests program links to make sure they work appropriately ☐ edits to enhance technical quality	3	**Edit and Testing** ☐ checks spelling, facts, graphics ☐ tests program links to make sure they work appropriately ☐ edits to enhance technical quality

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: MULTIMEDIA SOFTWARE FUNCTIONS INFMMSF

STUDENT: ______________________________ MODULE: INF ____________________

STANDARD	Students working **at standard** must demonstrate appropriate use of the software functions as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for **at standard** performance for the introductory, intermediate and advanced level modules. The rating scale at the bottom defines the different levels of competencies. Note: the list of software functions indicated by an asterisk (*) may need to be adjusted to reflect software that is available.

At Standard	*Introductory Level (INF1070)*	At Standard	*Intermediate Level (INF2130)*	At Standard	*Advanced Level (INF3130)*
1	**Text**: uses appropriate software functions to: ☐ create text ☐ enhance text (e.g., alignments/fonts/styles)/ ☐ manipulate and place text (e.g., copy, move, paste)	2	**Text**: uses appropriate software functions to: ☐ import/create text ☐ position text ☐ size text ☐ use font styles and colour ☐ use effects (e.g., fading)	3	**Text**: uses appropriate software functions to: ☐ continue to use the software functions from the intermediate level ☐ capture/import text from external sources ☐ save text
1	**Graphics**: uses appropriate software functions to: ☐ create graphics ☐ select graphics ☐ manipulate graphics	2	**Graphics**: uses appropriate software functions to: ☐ create background ☐ import/create graphics (use of scanner, clipart, etc.) ☐ resize ☐ use colour palettes ☐ position graphics	3	**Graphics**: uses appropriate software functions to: ☐ continue to use software functions from the intermediate level ☐ capture/import graphics from external sources ☐ save
1	**Sound**: uses appropriate software functions to: ☐ create sound ☐ select sounds ☐ manipulate sounds	2	**Sound**: uses appropriate software functions to: ☐ import/create sound ☐ edit sound file ☐ save sound file	3	**Sound**: uses appropriate software functions to: ☐ continue to use software functions from the intermediate level ☐ capture/import sounds from peripheral devices ☐ save digitally
	Video: uses appropriate software functions to: ☐ insert a pre-made video clip	2	**Video**: uses appropriate software functions to: ☐ import existing video clip ☐ view existing video clip ☐ edit existing video clip ☐ merge two or more existing video clips ☐ save edited video clip	3	**Video**: uses appropriate software functions to: ☐ continue to use software functions from the intermediate level ☐ capture/import video clips from external sources ☐ save
1	**Animation**: uses appropriate software functions to: ☐ create a frame, object or cell based presentation	2	**Animation**: uses appropriate software functions to: ☐ import existing animation clip ☐ view an existing animated clip ☐ edit an existing animated clip ☐ create an animated clip	3	**Animation**: uses appropriate software functions to: ☐ continue to use software functions from the intermediate level ☐ create/import animations from external sources ☐ save

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

BEST COPY AVAILABLE

ASSESSMENT CHECKLIST: INTRODUCTORY AND INTERMEDIATE PROGRAMMING **INFPRGM1**

STUDENT: ______________________ MODULE: INF ______________________

STANDARD	Students working **at standard** must demonstrate use of problem-solving techniques when producing a program using criteria as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for **at standard** performance for the introductory and intermediate level modules. The rating scale at the bottom defines the different levels of competencies.

At Standard	*Introductory Level*	At Standard	*Intermediate Level*	
1	**Problem-solving Phase:** ☐ defines the nature of the problem and outlines what the program must do ☐ creates a simple algorithm that identifies the input, processes, and output of programs ☐ identifies the appropriate constants, variables, etc., in the program ☐ codes the algorithm using a programming language ☐ documents comments to programmers ☐ debugs and tests sample data ☐ codes and formats program properly ☐ evaluates final product to insure proper implementation (see below)	2	**Problem-solving Phase:** ☐ defines the nature of the problem and outlines what the program must do ☐ creates a simple algorithm that identifies the input, processes and output of programs ☐ identifies the appropriate constants, variables, etc., in the program ☐ codes the algorithm using a programming language ☐ documents comments to programmers ☐ debugs and tests sample data ☐ codes and formats program properly ☐ evaluates final product to insure proper implementation (see below)	
	Programming 1		***Programming 2***	***Programming 3***
1	**Implementation Phase:** Creates a minimum of three programs containing the following (see sample assignment 1A) ☐ **Input** - use of: • stringed variables • integer variables • real variables • numeric and string constants • data entered through assignment statements and keyboard entry ☐ **Processes** - use of: • addition, subtraction, multiplication, division ☐ **Output** - formatting required: • rounds to a prescribed number of decimal places • lines up decimal points • inserts dollar signs where appropriate • column formatting occurs ☐ **Documentation and Presentation** • includes statement of problem • presents flowchart to show how program was created • presents user's guide with clear and concise instructions • describes problems encountered during production and testing • aesthetic presentation: follows acceptable design principles	2	**Implementation Phase:** Creates a minimum of three programs containing the following (see sample assignment 2A) ☐ **Input** - same as introductory level ☐ **Processes** - same as introductory level plus use of: • predetermine, pre-check and post-check looping constructs • decision-making constructs ☐ **Output** • same as introductory level ☐ **Documentation and Presentation** • same as introductory level	**Implementation Phase:** Restructures a minimum of three programs to include the following (see sample assignment 3A) ☐ **Input** - same as introductory level plus use of: • appropriate local and global variables ☐ **Processes** - same as introductory level plus use of: • predetermine, pre-check and post-check looping constructs • decision-making constructs • appropriate subprograms structures • proper one- & two-way parameter passing ☐ **Output** • same as introductory level ☐ **Documentation and Presentation** • same as introductory level

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: INTERMEDIATE PROGRAMMING — INFPRGM2

STUDENT: ______________________________ MODULE: INF ______________________

STANDARD	Students working **at standard** must demonstrate use of problem-solving techniques when producing programs using criteria as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for **at standard** performance for the intermediate level modules. The rating scale at the bottom defines the different levels of competencies.

At Standard	*Intermediate Level*	At Standard	*Intermediate Level*
2	**Problem-solving Phase:** ☐ defines the nature of the problem and outlines what the program must do ☐ creates an algorithm that identifies the input, processes and output of programs ☐ identifies the appropriate constants, variables, etc., in the program ☐ codes the algorithm using a programming language ☐ documents comments to programmers ☐ debugs and tests sample data ☐ codes and formats program properly ☐ evaluates final product to insure proper implementation (see below)	2	**Problem-solving Phase:** ☐ defines the nature of the problem and outlines what the program must do ☐ creates a simple algorithm that identifies the input, processes and output of programs ☐ identifies the appropriate constants, variables, etc., in the program ☐ codes the algorithm using a programming language ☐ documents comments to programmers ☐ debugs and tests sample data ☐ codes and formats program properly ☐ evaluates final product to insure proper implementation (see below)
2	***Programming 4***	2	***Programming 5***
	Implementation Phase: creates a minimum of three programs containing the following (see sample assignment 4A/B for procedure-oriented [P/O] or object-oriented [O/O]) ☐ **Input** - use of: • stringed, integer and real variables • numeric and string constants • data entered through assignment statements and keyboard entry • appropriate local and global variables • data is stored in appropriate derived data types • error trapping occurs using appropriate derived data types • data components of a class are identified (O/O only) ☐ **Processes** - use of: • addition, subtraction, multiplication, division • predetermine, pre-check and post-check looping constructs • decision-making constructs • appropriate subprogram structures • proper one- and two-way parameter passing • summation of data stored in arrays • predefined string functions and procedures • methods to be used in classes are identified (O/O only) • objects are constructed employing user-defined classes (O/O only) • data is transferred to objects (O/O only) ☐ **Output** - formatting required • rounds to a prescribed number of decimal places • lines up decimal points and inserts dollar signs where appropriate • column formatting occurs ☐ **Documentation and Presentation** • presents statement of problem and algorithm to show how program was created • presents user's guide with clear and concise instructions • describes problems encountered during production and testing • aesthetic presentation: uses acceptable design principles		**Implementation Phase:** Creates a minimum of three programs containing the following (see sample assignment 5A/B for procedure-oriented [P/O] or object-oriented [O/O]) ☐ **Input** - same criteria as in Programming 4 plus: • modifications to existing classes are identified (O/O only) • characteristics to be inherited by new classes are identified (O/O only) ☐ **Processes** - same criteria as in Programming 4 plus use of: • sorting based on differing criteria (P/O) • search routines (P/O) • merge routines (P/O) ☐ **Output** - same criteria as in Programming 4 ☐ **Documentation and Presentation** - same criteria as in Programming 4

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: ADVANCED PROGRAMMING APPLICATIONS INFPRGM3

STUDENT: ______________________________ MODULE: INF ____________________

STANDARD	Students working **at standard** must demonstrate use of problem solving techniques when producing a program using criteria as noted in the checklists below. The columns to the left of the checklists indicate the minimum rating for **at standard** performance for the advanced level modules. The rating scale at the bottom defines the different levels of competencies.

At Standard	*Advanced Level - PA1*	*Advanced Level - PA2*	*Advanced Level - PA3*
3	**Problem-solving Phase:** ☐ defines the nature of the problem and outlines what the program must do ☐ creates an algorithm that identifies the input, processes and output of programs ☐ identifies the appropriate constants, variables, etc., in the program ☐ codes the algorithm using a programming language ☐ documents comments to programmers ☐ debugs and tests sample data ☐ codes and formats program properly ☐ evaluates final product to insure proper implementation	**Problem-solving Phase:** ☐ defines the nature of the problem and outlines what the program must do ☐ creates an algorithm that identifies the input, processes and output of programs ☐ identifies the appropriate constants, variables, etc., in the program ☐ codes the algorithm using a programming language ☐ documents comments to programmers ☐ debugs and tests sample data ☐ codes and formats program properly ☐ evaluates final product to insure proper implementation	**Problem-solving Phase:** ☐ defines the nature of the problem and outlines what the program must do ☐ creates an algorithm that identifies the input, processes and output of programs ☐ identifies the appropriate constants, variables, etc., in the program ☐ codes the algorithm using a programming language ☐ documents comments to programmers ☐ debugs and tests sample data ☐ codes and formats program properly ☐ evaluates final product to insure proper implementation
3	**Implementation Phase:** Creates programs containing the following (see sample assignment PA1) ☐ **Input** - use of: • stringed, integer and real variables • numeric and string constants • data entered through assignment statements and keyboard entry • appropriate local and global variables ☐ **Processes** - use of • addition, subtraction, multiplication, division • predetermine, precheck and post-check looping constructs • decision-making constructs • appropriate subprograms are structures are selected • proper one- and two-way parameter passing ☐ **Output** - formatting required • rounds to a prescribed number of decimal places • lines up decimal points • inserts dollar signs where appropriate • column formatting occurs ☐ **Documentation and Presentation** • presents statement of problem and algorithm to show how program was created • presents user's guide with clear and concise instructions • describes problems encountered during production and testing • aesthetic presentation: uses acceptable design principles	**Implementation Phase:** In a second language creates programs containing the following (see sample assignment PA2) ☐ **Input** - same as PA1 ☐ **Processes** - same as PA1 ☐ **Output** - same as PA1 ☐ **Documentation and Presentation** - same as PA1	**Implementation Phase:** In a second language creates or expands on programs to contain the following (see sample assignment PA3) ☐ **Input** - same as PA2 plus: • data is stored in arrays • external data files (text and nontext) are created • data is retrieved from external files ☐ **Processes** - same as PA2 plus: • files (text and nontext) are created • files are accessed (sequentially and randomly) • the contents of files are modified • data is appended to a file ☐ **Output** - same as PA2 ☐ **Documentation and Presentation** - same as PA2

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

BEST COPY AVAILA[illegible]E

SAMPLE ASSIGNMENT: 1A

Your school employs you to run the Xerox machine. They pay you $5.00 per hour. They are obligated to withhold 30% of your gross pay for income tax purposes.

Write a program that allows for the entry of the school name, employee name, number, and the total number of hours worked for the week. The program should produce an output similar to the one below.

```
Henry Wisewood Senior High School
Employee #1    Name:          Harry Smith
               Hours Worked:  40
               Gross Pay:     $200.00
               Deductions:      66.67
               Net Pay:        133.33
```

For standard, conditions and criteria see assessment checklist: Introductory and Intermediate Programming (INFPGM1), Introductory level.

SAMPLE ASSIGNMENT: 2A

Your school employs a number of students to run the Xerox machine. The employees are paid $5.00 per hour. The tax rate varies according to the amount earned (more than $200.00 per week is calculated at 42%, greater than $100.00 and less than $200.00 is calculated at 30%, and less than or equal to $100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that allows for the entry of the school, the employee name and number, and the total number of hours worked for the week for an unknown number of employees. The program should produce the following output:

```
Henry Wisewood Senior High School
Employee #1    Name:          Harry Smith
               Hours Worked:  40
               Gross Pay:     $200.00
               Deductions:      66.67
               Net Pay:        133.33

Employee #2    Name:          Gordon Elliot
               Hours Worked:  50
               Gross Pay:     $275.00
               Deductions:     115.50
               Net Pay:        160.50
```

```
Employee #3    Name:           Ken East
               Hours Worked:   10
               Gross Pay:      $90.00
               Deductions:       0.00
               Net Pay:         90.00
```

For standard, conditions and criteria see assessment checklist: Introductory and Intermediate Programming (INFPGM1), Intermediate level.

SAMPLE ASSIGNMENT: 3A

Your school employs a number of students to run the Xerox machine. The employees are paid $5.00 per hour. The tax rate varies according to the amount earned (more than $200.00 per week is calculated at 42%, greater than $100.00 and less than $200.00 is calculated at 30%, and less than or equal to $100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Restructure the program in assignment 2A by creating a sub-program to accept the school name, employee number and name, and prints the heading for the pay stub. Write another sub-program that accepts the number of hours worked, calculates the gross pay, calculates the deductions and returns both to the main program. Next, pass these values to a third sub-program, which prints the hours worked, the gross pay, deductions and the net pay. The program should produce the following output:

```
Henry Wisewood Senior High School
Employee #1    Name:           Harry Smith
               Hours Worked:   40
               Gross Pay:      $200.00
               Deductions:       66.67
               Net Pay:         133.33

Employee #2    Name:           Gordon Elliot
               Hours Worked:   50
               Gross Pay:      $275.00
               Deductions:      115.50
               Net Pay:         160.50

Employee #3    Name:           Ken East
               Hours Worked:   10
               Gross Pay:      $90.00
               Deductions:       0.00
               Net Pay:         90.00
```

For standard, conditions and criteria see assessment checklist: Introductory and Intermediate Programming (INFPGM1), Intermediate level.

SAMPLE ASSIGNMENT: 4A/B Procedure-oriented or Object-oriented

Your school employs a number of students to run the Xerox machine. The employees are paid $5.00 per hour. The tax rate varies according to the amount earned (more than $200.00 per week is calculated at 42%, greater than $100.00 and less than $200.00 is calculated at 30%, and less than or equal to $100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that uses an array structure to store the data on three employees for one month. The data stored on each employee should include surname, first name, hours worked per week, employee number, number of years worked, and calculates the gross pay and the deductions and returns both to the main program. Next, pass these value to a third sub-program, which prints the hours worked, the gross pay, deductions and the net pay. The program should include appropriate derived data types for error trapping on data entry. The program should produce the following output:

```
Your school name
Employee #1  Name:          Harry Smith
             Hours Worked:  40
             Gross Pay:     $200.00
             Deductions:      66.67
             Net Pay:        133.33

Employee #2  Name:          Gordon Elliot
             Hours Worked:  50
             Gross Pay:     $275.00
             Deductions:     115.50
             Net Pay:        160.50

Employee #3  Name:          Ken East
             Hours Worked:  10
             Gross Pay:     $90.00
             Deductions:      0.00
             Net Pay:         90.00
```

```
Summaries for the data for each employee for the month:

     Name          Hours Worked    Total Gross    Total Deductions    Net Pay
Harry Smith            160          $ 800.00          $266.68         $533.32
Gordon Elliott         200           1100.00           462.00          638.00
Ken East                72            360.00             0.00          360.00

Surname first for the data for each employee for the month:

     Name          Hours Worked    Total Gross    Total Deductions    Net Pay
Smith, Harry           160          $ 800.00          $266.68         $533.32
Elliott, Gordon        200           1100.00           462.00          638.00
East, Ken               72            360.00             0.00          360.00

Summary for the firm:

         Total Gross          Total Deductions          Total Net
          $2260.00                $728.68               $1531.32
```

For standard, conditions and criteria see Assessment Checklist: Intermediate Programming (INFPGM2)

SAMPLE ASSIGNMENT: 5A Procedure-Oriented Programming Project

Your school employs a number of students to run the Xerox machine. The employees are paid $5.00 per hour. The tax rate varies according to the amount earned (more than $200.00 per week is calculated at 42%, greater than $100.00 and less than $200.00 is calculated at 30%, and less than or equal to $100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that uses an array structure to store the data on three employees for one month. The data stored on each employee should include surname, first name, hours worked per week, employee number, number of years worked, and calculates the gross pay and the deductions and returns both to the main program. Next, pass these value to a third sub-program, which prints the hours worked, the gross pay, deductions and the net pay. The program should include appropriate derived data types for error trapping on data entry. The program should produce the following:

- data sorted by employee number
- data sorted by employee name
- data sorted by net pay
- a routine to add new employees and merge with existing staff
- a routine to search data for a given employee by name and number

For standard, conditions and criteria see Assessment Checklist: Intermediate Programming (INFPGM2)

SAMPLE ASSIGNMENT: 5B Object-Oriented Programming Project

Your school employs a number of students to run the Xerox machine. The employees are paid $5.00 per hour. The tax rate varies according to the amount earned (more than $200.00 per week is calculated at 42%, greater than $100.00 and less than $200.00 is calculated at 30%, and less than or equal to $100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Modify the employee benefits to include health benefits and insurance benefits, whether the employee is single, married or not taking any benefits. Premiums for health benefits are deducted at the following rates:

Class	Health Premium	Insurance Premium
Single	$ 5.00	2% of gross
Family	10.00	3% of gross
No Benefits	0.00	0%

Create a new class for management. This management team will include the President, the Vice President, the Controller and the Secretary. This new class shall inherit the health and insurance premiums from the employee class and include the salary rate for the position; these salaries are correspondingly, $50,000.00, 45,000.00, $40,000.00, $30,000.00 paid monthly.

Write a program that will prompt the operator to enter the number or hours worked per month for each employee. Have it calculate the total gross paid per month to employees and management. Have it print out the total gross expenses to the company per month.

For standard, conditions and criteria see Assessment Checklist: Intermediate Programming (INFPGM2)

SAMPLE ASSIGNMENT: PA1

Your school employs a number of students to run the Xerox machine. The employees are paid $5.00 per hour. The tax rate varies according to the amount earned (more than $200.00 per week is calculated at 42%, greater than $100.00 and less than $200.00 is calculated at 30%, and less than or equal to $100.00 pays no tax). Overtime is paid to employees (time and a half to those working over 40 hours per week).

Write a program that will create an external file of employee records. Have the program retrieve and print the contents of the files. Have the program append new employees to the file, and allow for the modification of any employee record in that data file. Have the program create a text file containing the month end summary.

For standard, conditions and criteria see Assessment Checklist: Advanced Programming (INFPGM3)

SAMPLE ASSIGNMENT: PA2

Recode the latest development of your employee program using a second language.

For standard, conditions and criteria see Assessment Checklist: Advanced Programming (INFPGM3)

SAMPLE ASSIGNMENT: PA3

In a second language expand your payroll program to include monthly data on multiple employees. Output should match criteria set in Programming 5 and Programming Applications I.

For standard, conditions and criteria see Assessment Checklist: Advanced Programming (INFPGM3)

ASSESSMENT CHECKLIST: SPECIALIZATION 1 AND 2	**INFSPEC**

STUDENT: ______________________________ **MODULE: INF** ________

STANDARD **Rating of 3**	Students working **at standard** must demonstrate preparation of mailable documents (no errors in text) and well formatted, based on rough draft, unformatted sources. The **at standard** level of competency for these advanced level modules is 3. The scale at the bottom defines the different levels of competencies.

Specialization 1 (INF3100)	*Specialization 2 (INF3110)*
Simulation I **Area of Specialization** ______________________ ☐ **Uses terminology** - demonstrates use of appropriate terminology in both written and oral forms for chosen specialization ☐ **Manages time and makes decisions -** • establishes purpose/use of activities • establishes timelines/prioritize tasks • selects and uses required resources (e.g., appropriate software to use) • adheres to applicable office routines/practices ☐ **Creates documents** - produces documents from rough draft, unformatted sources that simulate work in a specialized office environment including a variety of the following: • letters, memos, reports • newsletters, tables, enumerations • specialized forms, charts, displays • itineraries, calendars, agendas, minutes • make and use specialized templates, macros or autotext ☐ **Edits exiting documents** - retrieve and edit documents related to area of specialization	**Simulation - II** - produces documents under time constraints appropriate for the complexity of the task (note: expected keyboarding skill at Keyboarding 2 standard, 30 wpm) ☐ **Uses terminology** - demonstrates improvement in the use of appropriate terminology in both written and oral forms for chosen specialization. ☐ **Manages time and makes decisions -** • establishes purpose/use of activities • establishes timelines/prioritize tasks • selects and uses required resources (e.g., appropriate software to use) • adheres to applicable office routines/practices ☐ **Creates documents** - continues, now under time constraints, the production of documents from rough draft, unformatted sources that simulate work in a specialized environment including a variety of the following: • letters, memos, reports • newsletters, tables, enumerations • specialized forms, charts, displays • itineraries, calendars, agendas, minutes • make and use specialized templates, macros or autotext ☐ **Edits exiting documents** - continues, now under time constraints, to retrieve and edit documents related to area of specialization
☐ **Document Editing -** enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of • spell check and/or grammar check • thesaurus • proofreading skills • principles of design • appropriate document formats • aesthetically pleasing look	☐ **Document Editing -** enhances the quality of documents and insures all documents are mailable (no errors in text) and well-formatted through the use of • spell check and/or grammar check • thesaurus • proofreading skills • principles of design • appropriate document formats • aesthetically pleasing look

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

©Alberta Education, Albe[illegible] Canada

ASSESSMENT CHECKLIST: SPREADSHEETS INFSS

STUDENT: ______________________________

MODULE: INF______________

STANDARD	Students working **at standard** must demonstrate problem-solving techniques through the use of software functions noted in the checklists below and in the preparation of well-designed and accurate documents. The columns to the left of the checklists indicate the minimum competency level for **at standard** performance for the introductory and intermediate level modules. The scale at the bottom defines the different levels of competencies. Note: The list of software functions indicated by an asterisk (*) may need to be adjusted to reflect software that is available.

At Standard	*Introductory Level (INF1060)*	At Standard	*Intermediate Level (INF2080)*
1	**Solves Problems with Spreadsheets** ☐ defines problems ☐ plans, designs and creates spreadsheets to solve problems and make decisions ☐ presents data visually through appropriate selection and use of chart graphing ☐ analyzes data to draw conclusions and make recommendations ☐ cites references where appropriate	2	**Solves Problems with Spreadsheets** ☐ defines problems ☐ plans, designs and creates spreadsheets to solve problems and make decisions ☐ presents data visually through appropriate selection and use of chart graphing ☐ analyzes data to draw conclusions and make recommendations ☐ cites references where appropriate
1	**Formatting Functions** ☐ enters text: headings/labels ☐ enters values: numbers, *dates, *time ☐ aligns cells: left, right, centre ☐ uses text styles: bold, underscore, italics, borders, shading ☐ uses font styles/sizes ☐ formats numbers: %, $, commas, decimals ☐ enters formulas using: – operators (e.g., +, - x /) – numbers, constant values (e.g., 1, 10, 12.5, -16) – cell and range references (e.g., A10 and A1: A8) – functions (sum, avg. min/max) ☐ fills/copies down and right ☐ highlights cells, rows, columns and range ☐ shows/hides gridlines ☐ creates footers/headers ☐ pages number text ☐ uses split/freeze frame ☐ uses help function ☐ previews/prints text (*landscape and portrait)	2	**Formatting Functions** ☐ continues to demonstrate use of basic software functions at introductory level ☐ enters a series of numbers or dates ☐ uses advanced formula functions such as: • look up • if/then • calculate/recalculate "what if" scenarios ☐ hides columns ☐ incorporates macros ☐ uses template function ☐ merges with another document
1	**File/Edit/Proofread/Manipulate Functions** ☐ creates new files (save as) ☐ opens/closes/updates files (save) ☐ navigates around spreadsheet (cursors, go to, select, home, end, page up/down, *scroll bar/arrows) ☐ changes appearance: – cell height/width/alignment – add/delete borders and shading – setup page (landscape vs. portrait) – margins (top, bottom, right, left) ☐ inserts/deletes rows and columns ☐ edits/copies/moves/pastes cells and cell groups ☐ sorts alphabetically and numerical ☐ displays/prints showing formulas and values	2	**File/Edit/Proofread/Manipulate Functions** ☐ continues to demonstrate use of basic software functions at intro level ☐ inserts/deletes manual page breaks ☐ changes headers/footers/page numbering
1	**Chart Formatting Functions** ☐ converts spreadsheet to chart graphs (bar, line, pie, XY, combination) ☐ names charts/updates/opens/renames ☐ creates/edits charts: – add and delete axes – change scale of axes – add or remove right vertical axis – add or change category labels – add or delete data labels change colours and patterns – add, change or delete a legend/title/subtitle – change fronts, font sizes and styles – add gridlines and borders – change page and margin settings ☐ deletes a chart ☐ previews/prints charts in landscape and portrait	2	**Chart Formatting Functions** ☐ continues to demonstrate use of basic software functions at introductory level ☐ changes marker shapes in line graphs ☐ explodes a pie chart ☐ mixes lines and bars in a graph ☐ duplicates a chart ☐ merges with another document

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

BEST COPY AVAILABLE

ASSESSMENT CHECKLIST: TEXT – DATA ENTRY INFTDENT

STUDENT : ______________________________ MODULE: INF____________________

STANDARD	Students working **at standard** must demonstrate the technique requirements outlined in the checklists below. The columns to the left of the checklists indicate the minimum rating for **at standard** performance for introductory, intermediate and advanced level modules. The rating scale on the right-hand side defines the levels of competencies and should be applied when assessing student performance.

Observation of Student	Minimum Standard (Intro Level)	Minimum Standard (Inter Level)	Minimum Standard (Adv. Level)	**TECHNIQUE REQUIREMENTS** *The student:*
___	3	3	3	**Eye Focus:** keeps eyes on copy when doing basic text/data entry (observations should occur during timings or drills on straight copy materials, using the syllabic intensity [SI] defined within the module)
___	2	3	3	**Keystroking:** ☐ uses correct fingering for alphabetic, punctuation, numeric and symbol keys as specified in the module ☐ begins and ends all keystrokes at home-row position ☐ anchors the appropriate fingers when entering text (returns to home row without pause) ☐ uses the thumb for the spacebar ☐ uses enter, shift and tab keys with correct fingers
___	1	2	3	**Service Keys:** Uses appropriate fingers/hand movements to: ☐ edits (e.g., insert, delete, backspace) ☐ moves within document (home, end, page up, page down, arrows) ☐ activates function keys
___	2	3	3	**Body Position**: Maintains proper, relaxed body position: ☐ comfortable distance from keyboard (e.g., hand-span away) ☐ centered in front of keyboard ☐ back erect, lower back against back of chair ☐ feet flat on floor ☐ fingers curved, wrists level, not resting on keyboard ☐ arms appropriately positioned

Rating Scale

4	Demonstrates initiative that exceeds required techniques/skills
3	Consistently demonstrates all designated techniques/skills, rarely needs prompting
2	Demonstrates all designated techniques/skills, occasionally needs prompting
1	Demonstrates most designated techniques/skills, frequently needs prompting
0	Does not demonstrate designated technique/skill

REFLECTIONS/COMMENTS

©Alberta Education, Alb Canada

ASSESSMENT CHECKLIST: WORD PROCESSING INFWP

STUDENT: ______________________________ MODULE: INF ____________________

STANDARD	Students working **at standard** must demonstrate appropriate use of the software functions as noted in the checklists below and during the preparation of mailable documents (no errors in text and format). The columns to the left of the checklists indicate the minimum competency for **at standard** performance for the introductory, intermediate and advanced level modules. The scale at the bottom defines the different levels of competencies. Note: The list of software functions indicated by an asterisk {*} may need to be adjusted to reflect software that is available.

At Standard	*Introductory Level (INF1030)*	At Standard	*Intermediate Level (INF2050)*	At Standard	*Advanced Level (INF3060)*
1	**Document Production** - a collection of mailable documents focusing on personal applications consisting of basic: ☐ letters (e.g., personal, personal business letters, memos) ☐ reports (e.g., essays, poems, journals, position papers, research papers) ☐ tables (e.g., calendars, recipes, lists) that demonstrate the use of the following entry level software functions.	2	**Document Production** - continues to add to collection of mailable documents focusing on both personal and business applications through the production of detailed: ☐ letters ☐ reports ☐ memos ☐ tables that demonstrate the use of the following software functions.	3	**Document Production** - continues to add to collection of mailable documents focusing on business applications through the production of complex: ☐ letters ☐ tables ☐ memos ☐ reports that demonstrate the use of the following software functions.
1	**Formatting Functions:** ☐ rulers/margins/line spacing ☐ text alignment: left, centre, right, full justified ☐ tabs/indents ☐ text styles (e.g., bold, underscore, italics, subscript, superscript) ☐ font types/sizes ☐ *basic table functions ☐ subscripts/superscripts ☐ bulleted and numbered lists ☐ borders/shading ☐ footers/headers ☐ page numbering ☐ page breaks (e.g., hard breaks, widows/orphans) ☐ *insert graphics (size and scale) ☐ help function ☐ *preview/print text	2	**Formatting Functions:** ☐ continues to use functions from introductory level ☐ columns/tables ☐ footnotes/endnotes ☐ inserting graphics in boxes/ frames (crop) ☐ preset macros ☐ create simple macros ☐ templates . ☐ autotext ☐ mail merges ☐ envelopes and labels features ☐ math calculations ☐ additional auto functions (e.g., style gallery, auto format, auto table format ☐ additional insert functions (e.g., index, table of contents, figures and authorities, outlines)	3	**Formatting Functions:** ☐ continues to use functions from introductory and intermediate levels ☐ customizing features (e.g., toolbars and menus) ☐ desktop publishing features consisting of: • brochure layouts with multiple panels • character and paragraph spacing • wrapping text around boxes/frames ☐ create more detailed macros ☐ *draw features ☐ math calculations ☐ table sorts ☐ establish and use libraries and macros
1	**File/Edit/Proofread/ Manipulate Functions** ☐ create files ☐ open/close/update files ☐ move around documents (cursors, go to, scroll) ☐ select text, *format painter ☐ cut, copy, paste ☐ move and delete ☐ zoom ☐ spell check ☐ *grammar check ☐ thesaurus ☐ search/find/replace	2	**File/Edit/Proofread/Manipulate Functions** ☐ continues to use all functions from introductory level ☐ *show/hide nonprint characters ☐ *revision marks ☐ switching/copying/pasting between documents	3	**File/Edit/Proofread/Manipulate Functions** ☐ continues to use all functions from introductory and intermediate levels ☐ bookmark ☐ edit macros ☐ *protect document

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

BEST COPY AVAILABLE

ASSESSMENT CHECKLIST: WORKSTATION ROUTINES AND MANAGEMENT — INFWRKSTN

STUDENT : ______________________ MODULE: MAM______________

STANDARD	Students working **at standard** must demonstrate the technique requirements outlined in the checklists below. The columns to the left of the checklists indicate the minimum rating for *at standard* performance for introductory, intermediate and advanced level modules. The rating scale on the right-hand side defines the levels of competencies and should be applied when assessing student performance.

Observation of Student	Minimum Standard (Intro Level)	Minimum Standard (Inter Level)	Minimum Standard (Adv. Level)	**TECHNIQUE REQUIREMENTS** ***The student:***
___	1	2	3	***Work Station Routines*** ☐ appropriately adjusts monitor, keyboard, desk, chair and other equipment to ensure workstation is ergonomically appropriate (comfortable, healthy, safe and efficient) ☐ maintains good body position ☐ observes ethical, legal and security measures in handling software and hardware (copyright, privacy, confidentiality) ☐ maintains an organized, neat workstation
___	2	3	3	***File Management*** ☐ labels, stores, accesses, backs-up, and uses files and disks appropriately ☐ creates and uses appropriate filenames and directories to organize information in a logical way ☐ saves, retrieves, moves, copies, deletes, renames files and directories as required
___	1	2	3	***Time Management/Organization*** ☐ locates/uses multiple resources when needing assistance (e.g., print, on-line, teacher, peers) ☐ allows adequate time for set-up and close-down procedures ☐ manages time effectively
___	2	3	3	***Professionalism*** ☐ takes initiative in evaluating and adjusting work processes and products to ensure they meet or exceed the standard ☐ responds to problems and accepts challenges by thinking critically and creatively ☐ uses related terminology appropriately

Rating Scale

4	Demonstrates initiative that exceeds required techniques/skills
3	Consistently demonstrates all designated techniques/skills, rarely needs prompting
2	Demonstrates all designated techniques/skills, occasionally needs prompting
1	Demonstrates most designated techniques/skills, frequently needs prompting
0	Does not demonstrate designated technique/skill

REFLECTIONS/COMMENTS

ASSESSMENT CHECKLIST:	**A. FILE MANAGEMENT PROCEDURES** **B. TEXT/DATA ENTRY** **C. COMPUTER WORKSTATION COMPONENTS**	**INF1010–1**

STUDENT: ______________________________ DATE: ______________

STANDARD	Students working **at standard** will demonstrate appropriate use of ***all*** of the points listed on the following three charts, but may need occasional prompting. Students working **above standard** will rarely need prompting. Note the file management procedures and workstation components may need to be adjusted to better reflect the type of computer equipment and software available.

A. FILE MANAGEMENT PROCEDURES

Observation of Student	*The student can:*
Y N	1. boot computer and/or log-on to network
Y N	2. access programs /move between programs
Y N	3. create, use and remove directories/folders
Y N	4. create files
Y N	5. save and retrieve files
Y N	6. rename files
Y N	7. back up files
Y N	8. edit files
Y N	9. copy files
Y N	10. move between files
Y N	11. delete files
Y N	12. format disks
Y N	13. select printer and print files

C. COMPUTER WORKSTATION COMPONENTS

	The student identifies and explains use of:
	Hardware Architecture, Configurations, Peripherals
Y N	1. input systems (e.g., keyboard, mouse, voice, tablet)
Y N	2. operating platforms/systems (e.g., MAC, DOS, WINDOWS)
Y N	3. output devices (e.g., monitor, printer)
Y N	4. communication devices (e.g., modem)
Y N	5. storage mediums (floppy disks, hard drive, network, CD)
	Software
Y N	1. applications (word processing, spreadsheet, integrated, etc.)
Y N	2. shell (e.g., Windows, Finder)
Y N	3. utility (e.g., virus, checkers)

B. TEXT-DATA ENTRY PROCEDURES

Observation of Student	*The student:*	Student Work	*The student:*
	demonstrates "touch keyboarding" (correct fingering and eye focus) with:		**produces error-free documents by:**
Y N	1. alphabetic keys	Y N	1. proofreading text and data (manually and with spell checks if available)
Y N	2. numeric keys (on alpha keyboard)	Y N	2. editing text and data
Y N	3. basic punctuation keys (. , ; :, ?, :)		
Y N	4. shift keys, return/enter		

BEST COPY AVAILABLE

ASSESSMENT GUIDE: PRESENTATIONS AND REPORTS	**INF1010–2**

STUDENT : ______________________________ MODULE: INF_______________ _____

STANDARD	Students must prepare and present a report that meets the requirements outlined in the chart. The column to the left of the chart indicates the **at standard** level of competency. The scale on the right-hand side defines the levels of competencies and should be applied when assessing student performance. The minimum rating for ***at standard*** performance is level **1**, a rating of **2** or above indicates ***above standard*** performance.

Observation of Student	Minimum Standard	**PRESENTATION – REPORT REQUIREMENTS** ***The student:***
—	1	☐ **Preparation and Planning**: • sets goals and follows instructions accurately • responds to directed questions and follows necessary steps to find answers • accesses basic in-school/community information sources • interprets and organizes information into a logical sequence • records information accurately using correct technical terms • uses time effectively
—	1	☐ **Presentation and Reporting** • demonstrates effective use of one or more communication media; e.g., *Written*: spelling, punctuation, grammar, and basic format *Oral* - voice projection, body language *Audio-Visual* - techniques, tools
—	1	**Content:** The report provides a thorough: ☐ description of current or emerging technological initiative or issue ☐ actual or potential impact on individual and society ☐ list of sources of information

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS

©Alberta Education, Albe[illegible] Canada

ASSESSMENT GUIDE: INFORMATION HIGHWAY 1 **INF1090–1**

STUDENT: ______________________________

Observations of student	**CRITERIA** *The student:*
4 3 2 1 0	**Getting Started** ☐ explains what Internet is and what it is used for ☐ accesses the Internet through identified service provider ☐ describes web site addresses (URL) ☐ explores various web site addresses ☐ locates and discusses information related to network etiquette ☐ describes issues and strategies related to personal safety and security
4 3 2 1 0	**Communicating** (internal simulation or external) – based on available technology and access, the student: ☐ uses e-mail (send messages and attachments, receive, reply, organize mailbox) ☐ experiences on-line chatting (where permitted) ☐ explores at least one other newsgroups and/or listservs ☐ uses other communication technologies on the Internet as they become available such as – net phone – hot mail, net address – ______________________ – ______________________
4 3 2 1 0	**Access and Report Specific Information** – Given a specific topic the student: ☐ explores various web sites using alternative menus – icons – keying-in – bookmarks ☐ identifies net servers; e.g., Lycos, Excite ☐ identifies and uses various directories; e.g., Yahoo ☐ identifies and uses various search engines; e.g., Webcrawler ☐ identifies and uses appropriate search strategies ☐ saves information; e.g., text, graphics, video ☐ uses Internet sources to produce a report, presentation or project for an identified topic ☐ adds, deletes and uses bookmarks ☐ properly cites all Internet sources used

STANDARD IS 1 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS:

ASSESSMENT GUIDE: WORKSTATION OPERATIONS INF2010–1

STUDENT: ______________________________

Observations of Student	**CRITERIA** *The student:*
4 3 2 1 0	**Sets Up and Installs a System** ☐ identifies need of users and tools (e.g., software and other resources available) ☐ designs a plan for installation and configuration of system ☐ organizes tools for installation and configuration of system ☐ makes use of technical manuals to set up and install hardware and software ☐ connects hardware (e.g., system and cabling) ☐ installs software (well-organized and appropriately named directories on specified drive) for a variety of software including operating system, applications and utilities
4 3 2 1 0	**Troubleshoots Software and Hardware** ☐ tests system after installation ☐ tests system with users for satisfaction ☐ builds defence against viruses ☐ builds defence against intentional and unintentional user exploration ☐ identifies and organizes available resources for users
4 3 2 1 0	**Manages and Maintains a System** ☐ outlines a long-term plan for upgrading technology (e.g., cost/budget, maintenance, effectiveness of system) ☐ establishes policy and procedures on effective use of technology (e.g., personnel issues regarding effective use) ☐ provides training and/or support to those using the system

STANDARD IS 2 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS

ASSESSMENT GUIDE: PROCESS CONTROL PROJECT

INF2140–1

STUDENT: ______________________________

Observations of Student	**CRITERIA** *The student:*
4 3 2 1 0	**Researches** technology related to robotics: ☐ describes the types of tasks robots perform ☐ explains how robotics are effecting society now and in the future ☐ diagrams a basic robot, labelling components including the controller ☐ describes the functions of labelled components ☐ explains the processes used to control robots ☐ gives an example of when it would be feasible to use a robot over a human to perform a task ☐ gives an example of when it would be feasible to use a human over a robot to perform a task
4 3 2 1 0	**Assembles the Robot** ☐ follows a blueprint design ☐ determines the purpose of the robot from the provided design ☐ assesses the design capabilities of the completed robot ☐ tests the functionality of the robot to perform designated task
4 3 2 1 0	**Presents the Robot** ☐ describes the purpose of the robot ☐ demonstrates the use of the robot to perform designated task ☐ explains how the interrupts are used to control the robot ☐ evaluates the capabilities of the robot (what it can and cannot do)

STANDARD IS 2 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS

PROCESS CONTROL SAMPLE PROJECT INF2140–2

This project can be completed individually or as a group.

Research

Research and prepare a presentation in your choice of format (e.g., oral, written, multimedia, visual poster) dealing with the technology of robotics. The presentation should include the following topics:

- types of tasks robots perform
- how robotics are affecting society now and in the future
- diagram a basic robot, labelling components including the controller
- functions of labelled components
- processes used to control robots
- examples of when it would be feasible to use a robot over a human to perform a task
- examples of when it would be feasible to use a human over a robot to perform a task

Assembly of Robot

When assembling the robot you should be able to:

- follow the blueprint design given
- determine the purpose of the robot from provided designs
- assess the design limitations of the completed robot
- test the functionality of the robot to perform task

Presentation of Robot

Present a demonstration of the robot to your teachers and/or class and discuss the following:

- describe the purpose of the robot
- demonstrate the robot's ability to perform a task
- explain how the interrupts are used to control the robot
- explain how the provided code used or did not use the full functionality of the robot in the assigned task
- recommend more effective and efficient uses of the code
- evaluate the code's ability to complete the task assigned in the project
- evaluate your own presentation of the robot

ASSESSMENT CHECKLIST: TELECOMMUNICATION SYSTEMS USE INF2190–1

STUDENT: ______________________________

STANDARD	Students must demonstrate effective and efficient use of at least two communication systems to send and receive various types of information. Students working **at standard** will demonstrate competencies as described in rating scale **2**. Students working **above standard** will demonstrate competencies as described in rating scale **3** or **4**.

At Standard	Criteria	Telecommunication System No. 1 ______________________ *The student:*	Telecommunication System No. 2 ______________________ *The student:*
___ /2	Preparation	☐ describes the purpose of the transmission ☐ identifies the target audience for the transmission ☐ understands how the communication system works • type of system (wired, wireless, merged) • component parts • types of data/information transfer (voice, data, visuals, etc.)	☐ describes the purpose of the transmission ☐ identifies the target audience for the transmission ☐ understands how the communication system works • type of system (wired, wireless, merged) • component parts • types of data/information transfer (voice, data, visuals, etc.)
___ /2	Use	Sending Messages • uses equipment effectively, safely and efficiently • follows proper protocols and procedures Receiving Messages • uses equipment effectively, safely and efficiently • follows proper protocols and procedures	Sending Messages • uses equipment effectively, safely and efficiently • follows proper protocols and procedures Receiving Messages • uses equipment effectively, safely and efficiently • follows proper protocols and procedures
___ /2	Analysis	• Compares of the two systems in terms of cost-benefit.	

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: TELECOMMUNICATION SYSTEMS PRESENTATION/REPORT **INF2190–2**

STUDENT: ________________________________

STANDARD	Students must demonstrate effective research and presentation/report skills using the criteria as noted in the checklists below by describing TWO wired and TWO wireless systems. Students working **at standard** will demonstrate competencies as described in rating scale **2**. Students working **above standard** will demonstrate competencies as described in rating scale **3** or **4**.

At Standard	Criteria	Wireless System No. 1 ____________________ *The student:*	Wireless System No. 2 ____________________ *The student:*
____ /2	Preparation and Planning	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant in-school/community resources ☐ interprets, organizes and combines information into a logical sequence ☐ records information accurately with appropriate supporting detail and using correct technical terms ☐ plans and uses time effectively ☐ gathers and responds to feedback regarding approach to task and project status	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant in-school/community resources ☐ interprets, organizes and combines information into a logical sequence ☐ records information accurately with appropriate supporting detail and using correct technical terms ☐ plans and uses time effectively ☐ gathers and responds to feedback regarding approach to task and project status
____ /2	Presentation	☐ demonstrates effective use of at least two communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates ideas into a logical sequence with sufficient supporting detail ☐ states a conclusion by synthesizing the information gathered ☐ provides a reference list that includes five or more relevant information sources	☐ demonstrates effective use of at least two communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates ideas into a logical sequence with sufficient supporting detail ☐ states a conclusion by synthesizing the information gathered ☐ provides a reference list that includes five or more relevant information sources
____ /2	Content	The presentation/report includes the following: • key components of the system • type of information that can be transferred • bandwidth and typical users • estimate of cost to install • estimated cost to use • stage of development (status)	The presentation/report includes the following: • key components of the system • type of information that can be transferred • bandwidth and typical users • estimate of cost to install • estimated cost to use • stage of development (status)
____ /2	Analysis	• The presentation/report includes a comparison of the two systems and provides projection of which system will become dominant for a particular target audience/user.	

©Alberta Education, Alb Canada

ASSESSMENT CHECKLIST: TELECOMMUNICATION SYSTEMS PRESENTATION/REPORT (continued) INF2190–2

At Standard	Criteria	Wired System No. 1 ____________________ *The student:*	Wired System No. 2 ____________________ *The student:*
____ /2	Preparation and Planning	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant in-school/community resources ☐ interprets, organizes and combines information into a logical sequence ☐ records information accurately with appropriate supporting detail and using correct technical terms ☐ plans and uses time effectively ☐ gathers and responds to feedback regarding approach to task and project status	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant in-school/community resources ☐ interprets, organizes and combines information into a logical sequence ☐ records information accurately with appropriate supporting detail and using correct technical terms ☐ plans and uses time effectively ☐ gathers and responds to feedback regarding approach to task and project status
____ /2	Presentation	☐ demonstrates effective use of at least two communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates ideas into a logical sequence with sufficient supporting detail ☐ states a conclusion by synthesizing the information gathered ☐ provides a reference list that includes five or more relevant information sources	☐ demonstrates effective use of at least two communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates ideas into a logical sequence with sufficient supporting detail ☐ states a conclusion by synthesizing the information gathered ☐ provides a reference list that includes five or more relevant information sources
____ /2	Content	The presentation/report includes the following: • application/service provided • transmission system used • software used • standards and protocols used • personnel/expertise required	The presentation/report includes the following: • application/service provided • transmission system used • software used • standards and protocols used • personnel/expertise required
____ /2	Analysis	• The presentation/report includes a comparison of the two systems and provides projection of which system will become dominant for a particular target audience/user.	

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: TELECOMMUNICATIONS SYSTEMS INFRASTRUCTURE PRESENTATION/REPORT INF2190-3

STUDENT: ______________________________

STANDARD	Students must demonstrate effective research and presentation/report skills using the criteria as noted in the checklists below by describing TWO telecommunication systems infrastructures (wired or wireless or combined). Students working **at standard** will demonstrate competencies as described in rating scale **2**. Students working **above standard** will demonstrate competencies as described in rating scale **3** or **4**.

At Standard	Criteria	Telecommunication System No. 1 ____________ *The student:*	Telecommunication System No. 2 ____________ *The student:*
____/2	Preparation and Planning	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant in-school/community resources ☐ interprets, organizes and combines information into a logical sequence ☐ records information accurately with appropriate supporting detail and using correct technical terms ☐ plans and uses time effectively ☐ gathers and responds to feedback regarding approach to task and project status	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant in-school/community resources ☐ interprets, organizes and combines information into a logical sequence ☐ records information accurately with appropriate supporting detail and using correct technical terms ☐ plans and uses time effectively ☐ gathers and responds to feedback regarding approach to task and project status
____/2	Presentation	☐ demonstrates effective use of at least two communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates ideas into a logical sequence with sufficient supporting detail ☐ states a conclusion by synthesizing the information gathered ☐ provides a reference list that includes five or more relevant information sources	☐ demonstrates effective use of at least two communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates ideas into a logical sequence with sufficient supporting detail ☐ states a conclusion by synthesizing the information gathered ☐ provides a reference list that includes five or more relevant information sources
____/2	Content	The presentation/report includes the following: • application/service provided • transmission system used • software used • standards and protocols used • personnel/expertise required	The presentation/report includes the following: • application/service provided • transmission system used • software used • standards and protocols used • personnel/expertise required
____/2	Analysis	• The presentation/report includes a comparison of the two systems and provides projection of which system will become dominant for a particular target audience/user.	

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT GUIDE: INFORMATION HIGHWAY 2 INF2200–1

STUDENT: ______________________________

Observations of student	**CRITERIA** *The student:*
4 3 2 1 0	**Researching/Evaluating Web Page(s)** ☐ creates a suitable checklist to evaluate web pages ☐ identifies useful keywords for searching ☐ explains effective elements used in web pages ☐ uses a variety of search strategies ☐ makes use of bookmarks to organize and gain quick access to web sites used in research ☐ finds and collects information on the topics of interest
4 3 2 1 0	**Designing/Creating a Web Page(s)** ☐ describe target audience ☐ outlines an idea for a web page that is of interest ☐ organizes data for linking to web page ☐ creates a web page that is visually pleasing, incorporating: – a suitable layout for intended purpose – text, graphics, links and anchors – accepted guidelines such as: • attractive, yet simple • user friendly • feedback option • test and debug web page ☐ formats information in an acceptable and/or creative style
4 3 2 1 0	**Documentation/Presentation** ☐ properly cites all Internet sources used ☐ prepares report and/or presentation in an acceptable format ☐ presents web page to others ☐ provides a guide for new users of the web page
4 3 2 1 0	**Enhancing a Web Page(s)** ☐ evaluate the impact of the web page ☐ identify potential layout improvements ☐ enhance a newly created or existing web page by: – updating data – editing web page (e.g., text, graphics) – adding/modifying special feature(s) ☐ explain reasons for the changes ☐ present enhanced web page

STANDARD IS 2 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS:

PRESENTATIONS/REPORTS: HARDWARE/SOFTWARE ANALYSIS INF3010–1

STUDENT: ______________________________

TASK	OBSERVATION/RATING
Planning and Presentation	4 3 2 1 0 N/A
Analysis – Hardware	4 3 2 1 0 N/A
Analysis – Software	4 3 2 1 0 N/A
Analysis – Report	4 3 2 1 0 N/A
Presenting/Reporting	4 3 2 1 0 N/A

STANDARD IS 2 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

TASK CHECKLIST - criteria for intermediate level

The student :

☐ **Preparation and Planning**

- sets goals and describes steps to achieve them
- uses personal initiative to formulate questions and find answers
- accesses a range of relevant in-school/community resources
- interprets, organizes and combines information into a logical sequence
- records information accurately with appropriate supporting detail and using correct technical terms
- plans and uses time effectively
- gathers and responds to feedback regarding approach to task and project status

ANALYSIS - HARDWARE

Content: analyzes and compares

☐ two different computer systems (internal components, peripheral devices) based on:
- client needs
- information base
- implementation timelines
- financial costs
- workstation requirements
- inservice training
- support services
- warranties

ANALYSIS - SOFTWARE

Content: analyzes and compares

☐ three task-specific software packages on the basis of:
- hardware/operating system requirements
- user friendliness
- training/learning effectiveness
- instructional support
- command/function parameters screen/page characteristics
- intended use/audience
- intercompatibility with other software

ANALYSIS REPORT

Content:

☐ prepares a report that responds to an identified need to provide or upgrade a computer system. The report will provide recommendations and rationale for a particular hardware/software components (recommendation and reasons) that addresses:
- client needs
- information base
- implementation timelines
- financial costs
- workstation requirements
- inservice training
- support services
- warranties
- legal restrictions

☐ **Presenting/Reporting**

- demonstrates effective use of at least two communication media:

  e.g., Written: spelling, punctuation, grammar, format (formal/informal)

  Oral: voice projection, body language, appearance

  Visual: techniques, tools, clarity
- maintains acceptable grammatical and technical standards through proofreading and editing
- provides an introduction that describes the purpose and scope of the project
- communicates ideas into a logical sequence with sufficient supporting detail
- states a conclusion by synthesizing the information gathered
- provides a reference list that includes five or more relevant information sources

©Alberta Education, Alb Canada

ASSESSMENT GUIDE: LOCAL AREA NETWORKS PROJECT — INF3020-1

STUDENT: ____________________________

Observations of Students	**CRITERIA** *The student:*
4 3 2 1 0	**Uses the Network** ☐ logs in and out; uses password (if necessary) ☐ demonstrates the ability to access information and programs on a LAN ☐ demonstrates the ability to download or upload files or data on a LAN ☐ organizes information on a LAN (e.g., create directories, name files)
4 3 2 1 0	**Relates How Networks Work** ☐ identifies the LAN's purpose/capabilities ☐ researches and compares network topologies ☐ researches installation and sets up hardware and software of a LAN
4 3 2 1 0	**Installs and Troubleshoots Software and Hardware** ☐ designs a plan for installation and configuration of a LAN ☐ installs and connects LAN hardware ☐ installs LAN software ☐ establishes users groups and security rights ☐ installs application software ☐ tests system after installation and make changes as necessary ☐ tests system with users for satisfaction ☐ builds a defence against viruses and intentional or unintentional user exploration
4 3 2 1 0	**Presents a Proposal for Maintaining a LAN** ☐ provides technical support for a LAN for a period of time ☐ plans and establishes policies and procedures for: • ethical use of software • network access, security and backup protection • user access, rights, passwords • file/disk management • software and data upgrades

STANDARD IS 2 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS

ASSESSMENT GUIDE: INFORMATION MANAGEMENT TOOLS PROJECT INF3080–1

STUDENT: ______________________________

Observations of Student	**CRITERIA** *The student:*
4 3 2 1 0	**Planning** ☐ identifies user's needs and determines how the software can be used to meet those needs ☐ defines basic information (key tasks, duration) ☐ links tasks where appropriate ☐ demonstrates ability to set milestones and constraints ☐ demonstrates ability to organize tasks into outline—detailing sub-tasks ☐ assigns resources and creates a base calendar ☐ demonstrates ability to view tasks and outline in a sub-task format
4 3 2 1 0	**Monitoring** ☐ identifies critical issues ☐ uses data to resolve time restrictions and resource constraints ☐ checks if this meets initial needs of user(s) ☐ makes necessary changes or adjustments ☐ edits, retrieves and manipulates information ☐ generates project reports as required
4 3 2 1 0	**Presenting** ☐ demonstrates the information management tool to others ☐ discusses the capabilities of the tool ☐ communicates the information in a logical sequence ☐ discusses the capabilities and limitations of using the management tool as it relates to the following: • user needs • ability to solve the problems of the user

STANDARD IS 2 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTION/COMMENTS

©Alberta Education, Albe[illegible] Canada

ASSESSMENT GUIDE: ARTIFICAL INTELLIGENCE (AI) PROJECT INF3140–1

STUDENT: ______________________________

Observation of Student	**CRITERIA** *The student*
4 3 2 1 0	**Researches** (expert systems, virtual reality [AI interfaces] or other identified AI technologies such as natural languages, robotics, exploratory programming) ☐ explains what the AI technology is and how it is affecting society now and in the future ☐ describes the jobs/tasks that the technology can perform in industry and personal living ☐ creates a diagram of the technology and its components, label and give a brief description of components ☐ identifies and gives examples of the advantages and disadvantages of using this type of technology to perform various types of tasks ☐ provides examples of when it would be feasible to use the emerging technology over a human or other present technology to perform a task ☐ describes other important criteria related to specific technology ☐ presents the research in an organized format of choice
4 3 2 1 0	**Uses AI Software** ☐ selects and/or identifies software being used ☐ plans and outlines a task **or** define and outline the problem ☐ describes the uses of the selected software ☐ demonstrates use of selected software to perform task **or** solve problem ☐ tests the program developed to perform task **or** solve problem ☐ adjusts and/or modifies program as a result of test
4 3 2 1 0	**Presents the Program** ☐ identifies purpose of program ☐ demonstrates use of program to complete task **or** solve problem ☐ explains the details of the program (how it works, challenges to overcome, etc.) ☐ evaluates the end results of the program (what it can and cannot do) ☐ evaluates presentation of the program

STANDARD IS 2 IN EACH APPLICABLE TASK

Rating Scale

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS

ARTIFICAL INTELLIGENCE (AI) SAMPLE PROJECT INF3140–2

This project can be completed individually or as a group.

Research

The **five major areas** of artificial intelligence comprise **expert systems, natural language, robotics, improved human interfaces (e.g., virtual reality) and exploratory programming.** The area that has received the most attention for commercial use is expert systems. Some areas that expert systems are being functional in are information processing, pattern recognition, game-playing computers and applied fields such as medical diagnosis. **This project will centre around expert systems.**

Within the area of expert systems, you will research and develop a portfolio to gain an introductory knowledge of the concepts. In the second part of the project you will learn how to program a piece of software related to expert systems that will solve a defined problem and you will conclude the project by presenting the program.

Your portfolio should begin with the following:

- *Topic* – describe the nature of your research (select a specific area/field to study, e.g., medical, computer games industry)
- *Resources* – provide a list of available resources you will use
- *Timeline* – a timeline of when activities are expected to be completed
- *Outcomes* – what you expect to achieve by the end of this project

Continue your portfolio by including research consisting of:

- an explanation of what expert systems are and how this technology is affecting society now and in the future (e.g., ethics)
- a description of the jobs/tasks expert systems can perform in industry and personal living
- a description of the area/field of expert systems being explored and a detailed diagram or explanation of the expert system
- identification and provision of examples of the advantages and disadvantages of using expert systems to perform various types of tasks in your chosen area
- identification and provision of examples of when it would be feasible to use expert systems over a human or other technology in your chosen area
- description of other important criteria related to expert systems

Note: Within your above research you should cover topics such as fuzzy logic, state space theory: prepositional logic, interpreted language, knowledge base (facts and rules) + inference engine (reasoning ability) = expert systems ability to perform conclusions, artificial intelligence; the use of user interfaces (e.g., virtual reality) in expert systems; and explanation facilities (systems ability to justify conclusions) in expert systems.

Application of Software

Using PROLOG, LISP or another artificial intelligence software package, write a program that solves one of the following problems:

- A farmer is at the river and needs to get to the other side. He has with him a fox, a goose and some grain. He can only take one item with him in the boat at a time. If the fox will eat the goose and the goose will eat the grain how will he get all three of his possessions over to the other side of the river without them being damaged?

- Write a program that allows two people to play tic-tac-toe on the computer

- Write a program that solves a problem as defined by you and/or your teacher

Presentation of Program

Present a demonstration of the program to your teacher and/or class and discuss the following:

- identify purpose of program
- demonstrate use of program to solve problem
- explain the details of the program (how it works, challenges to overcome, etc.)
- evaluate the end results of the program (what it can and cannot do)
- evaluate presentation of the program

ASSESSMENT CHECKLIST: TELECOMMUNICATION SYSTEMS INFRASTRUCTURE PRESENTATION/REPORT INF3180–1

STUDENT: ______________________________

STANDARD	Students must demonstrate effective research and presentation/report skills using the criteria as noted in the checklists below by comparing TWO telecommunication systems (wired or wireless or combined). Students working **at standard** will demonstrate competencies as described in rating scale **3**. Students working **above standard** will demonstrate competencies as described in rating scale **4**.

At Standard	Criteria	Telecommunication System No. 1 ______________ *The student:*	Telecommunication System No. 2 ______________ *The student:*
____ /3	Preparation and Planning	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant information sources and recognizes when additional information is required ☐ interprets, organizes and combines information in creative and thoughtful ways ☐ records information accurately, using appropriate technical terms and supporting detail ☐ plans and uses time effectively, prioritizing tasks on a consistent basis ☐ assesses and refines approach to task and project status based on feedback and reflection	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant information sources and recognizes when additional information is required ☐ interprets, organizes and combines information in creative and thoughtful ways ☐ records information accurately, using appropriate technical terms and supporting detail ☐ plans and uses time effectively, prioritizing tasks on a consistent basis ☐ assesses and refines approach to task and project status based on feedback and reflection
____ /3	Presentation	☐ demonstrates effective use of a variety of communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates thoughts/feelings/ideas clearly to justify or challenge a position ☐ states a conclusion by analyzing and synthesizing the information gathered ☐ gives evidence of adequate research through a reference list including seven or more relevant information sources	☐ demonstrates effective use of a variety of communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates thoughts/feelings/ideas clearly to justify or challenge a position ☐ states a conclusion by analyzing and synthesizing the information gathered ☐ gives evidence of adequate research through a reference list including seven or more relevant information sources
____ /3	Content	The presentation/report includes the following: • application/service provided • transmission system used • software used • standards and protocols used • personnel/expertise required	The presentation/report includes the following: • application/service provided • transmission system used • software used • standards and protocols used • personnel/expertise required
____ /3	Analysis	• The presentation/report includes a comparison of the two systems and provides projection of which system will become dominant for a particular target audience/user.	

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

ASSESSMENT CHECKLIST: TELECOMMUNICATION SYSTEMS INFRASTRUCTURE PRESENTATION/REPORT INF3180–2

STUDENT: ______________________________

STANDARD	Students must demonstrate effective research and presentation/report skills using the criteria as noted in the checklists below by comparing TWO telecommunication systems (wired or wireless or combined). Students working **at standard** will demonstrate competencies as described in rating scale **3**. Students working **above standard** will demonstrate competencies as described in rating scale **4**.

At Standard	Criteria	Telecommunication System No. 1 ______________ *The student:*	Telecommunication System No. 2 ______________ *The student:*
____ /3	Preparation and Planning	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant information sources and recognizes when additional information is required ☐ interprets, organizes and combines information in creative and thoughtful ways ☐ records information accurately, using appropriate technical terms and supporting detail ☐ plans and uses time effectively, prioritizing tasks on a consistent basis ☐ assesses and refines approach to task and project status based on feedback and reflection	☐ sets goals and describes steps to achieve them ☐ uses personal initiative to formulate questions and find answers ☐ accesses a range of relevant information sources and recognizes when additional information is required ☐ interprets, organizes and combines information in creative and thoughtful ways ☐ records information accurately, using appropriate technical terms and supporting detail ☐ plans and uses time effectively, prioritizing tasks on a consistent basis ☐ assesses and refines approach to task and project status based on feedback and reflection
____ /3	Presentation	☐ demonstrates effective use of a variety of communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates thoughts/feelings/ideas clearly to justify or challenge a position ☐ states a conclusion by analyzing and synthesizing the information gathered ☐ gives evidence of adequate research through a reference list including seven or more relevant information sources	☐ demonstrates effective use of a variety of communication media ☐ maintains acceptable grammatical and technical standards through proofreading and editing ☐ provides an introduction that describes the purpose and scope of the project ☐ communicates thoughts/feelings/ideas clearly to justify or challenge a position ☐ states a conclusion by analyzing and synthesizing the information gathered ☐ gives evidence of adequate research through a reference list including seven or more relevant information sources
____ /3	Content	The presentation/report includes the following: • target audience • benefits and impacts (individual and societal) • merging and connecting technologies	The presentation/report includes the following: • target audience • benefits and impacts (individual and societal) • merging and connecting technologies
____ /3	Analysis	• The presentation/report includes a comparison of the two systems and provides projection of which system will become dominant for a particular target audience/user.	

Rating Scale	**4** - Demonstrates initiative that exceeds required techniques/ skills	**3** - Consistently demonstrates all designated techniques/skills, rarely needs prompting	**2** - Demonstrates all designated techniques/skills, occasionally needs prompting	**1** - Demonstrates most designated techniques/skills, frequently needs prompting	**0** - Does not demonstrate designated technique/skill

BEST COPY AVAILABLE

ASSESSMENT CHECKLIST: TELECOMMUNICATION DESIGN PROJECT INF3180–3

Student: ______________________ Teacher: ______________________

Module: ______________________ Date: ______________________

CRITERIA	OBSERVATION/ RATING	STANDARD
Management	4 3 2 1 0	3
Teamwork	4 3 2 1 0 NA	3
Content	4 3 2 1 0	3
Equipment and Materials	4 3 2 1 0	3

STANDARD IS 3 IN EACH APPLICABLE CRITERIA

Rating Scale

The student:

4 exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.

3 meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.

2 meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.

1 meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.

0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

CRITERIA

The student:

Management
- ☐ prepares self for task
- ☐ organizes and works in an orderly manner
- ☐ interprets and carries out instructions accurately
- ☐ plans and uses time effectively
- ☐ adheres to routine procedures

Teamwork
- ☐ cooperates with group members
- ☐ shares work appropriately among group members
- ☐ negotiates solutions to problems
- ☐ exhibits basic teamwork skills (e.g., appropriate conduct, leadership, commitment, negotiation, sharing)

Content
- ☐ describes problem being addressed and identifies target audience
- ☐ lists improvements/benefits of new design
- ☐ provides appropriate drawings to accurately illustrate:
  - ☐ component parts
  - ☐ flow of communication
  - ☐ changes/innovation to original (prior) systems
- ☐ outline projected impacts on target audience
- ☐ prepare prototype of design
- ☐ outline projected costs

Equipment and Materials
- ☐ selects and uses appropriate equipment/materials
- ☐ models safe procedures/techniques
- ☐ minimizes waste of materials
- ☐ advises of potential hazards and necessary repairs

COMMENTS

ASSESSMENT GUIDE: INFORMATION HIGHWAY 3 **INF3190–1**

STUDENT: ____________________

Observation of student	**CRITERIA** ***The student:***
4 3 2 1 0	**Researching/Designing/Creating a Web Site** ☐ outlines an idea for a web site that is of interest and is appropriate to the audience ☐ finds and collects information on the topics of interest ☐ identifies effective elements to be used in web site ☐ organizes data for linking to other web pages ☐ constructs a web site that is visually pleasing, incorporating: – text, graphics, links, anchors – a functioning advanced feature; e.g., sound, animation – a suitable layout for intended purpose – accepted guidelines such as: • attractive, yet simple • user friendly • feedback option ☐ formats information in an acceptable and/or creative style ☐ tests and debugs web site
4 3 2 1 0	**Presenting/Documenting Advanced Feature(s)** ☐ presents information on how to implement the advanced feature in an understandable manner ☐ presents web site to others ☐ assists others to duplicate the special feature(s) ☐ properly cites all resources
4 3 2 1 0	**Maintaining/Enhancing a Web Site** ☐ evaluates the impact of the web site ☐ identifies which areas of web sites need monitoring ☐ updates web site ☐ edits web site (text, graphics, etc.) ☐ enhances web site by improving or adding special feature(s)

STANDARD IS 3 IN EACH APPLICABLE TASK

Rating Scale

The student:

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS:

BEST COPY AVAILABLE

ASSESSMENT GUIDE: INTERNET SERVICES **INF3200–1**

STUDENT: ____

Observation of student	CRITERIA *The student:*
4 3 2 1 0	**Accessing Information** ☐ finds and uses existing services of interest; e.g., e-mail ☐ follows proper netiquette procedure ☐ reports back findings
4 3 2 1 0	**Designing/Creating** ☐ designs a functional communication system ☐ builds a functional communication system ☐ maintains the system for an agreed period of time ☐ presents information on how to implement the communication system in an understandable manner ☐ presents system details to others
4 3 2 1 0	**Communication System as an Operator/Manager** ☐ configures hardware and software ☐ maintains files and user accounts ☐ troubleshoots and diagnoses problems ☐ offers user/client support service ☐ monitors/updates information and messages

STANDARD IS 3 IN EACH APPLICABLE TASK

Rating Scale

The student:

4	Exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence. *Leads others to contribute to team goals.*
3	Meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively. *Works cooperatively and contributes ideas and suggestions that enhance team effort.*
2	Meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately. *Works cooperatively to achieve team goals.*
1	Meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately. *Works cooperatively.*
0	Has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

REFLECTIONS/COMMENTS:

©Alberta Education, Alb[illegible]Canada

INFORMATION PROCESSING

SECTION H: LINKAGES/TRANSITIONS

TABLE OF CONTENTS

This section of the Guide has been designed to provide an overview of linkages and transitions of CTS modules with a number of organizations. The charts and information presented in this section will assist CTS students and teachers in understanding the potential application of CTS modules as students move into the workplace.

LINKAGES

With Other CTS Strands H.3
With Other Secondary Programs H.4
With Practical Arts Courses H.5

TRANSITIONS

To the Community/Workplace H.5
To Related Post-secondary Programs H.5

Charts

Information Processing: Connections with Other CTS Strands H.6
Information Processing: Connections Across the Curriculum H.7
Information Processing in Junior High H.8
Information Processing: Correlations with Practical Arts Courses: Business Education 10–20–30 and Typewriting 10–20–30 .... H.9
Information Processing: Correlation with Computer Processing 10–20–30 H.11
Information Processing: Correlations with Practical Arts Courses: Typewriting 10–20–30, Business Education 10–20–30 and Computer Processing 10–20–30 .... H.13
Information Processing: Related Occupations H.17
Information Processing: Summary of Related Post-secondary Programs..... H.18

LINKAGES/TRANSITIONS

LINKAGES

The Information Processing strand supports the integration of computers in all CTS strands as well as in all core or other complementary programs. In addition, the competencies developed in the Information Processing strand support a wide range of transitions into the workplace or related post-secondary programs.

With Other CTS Strands

There are direct and indirect linkages between Information Processing and all of the CTS strands, particularly where students are able to use computers as a learning tool. Examples of how students in other strands might use computer technology are indicated in the chart below.

Foods	• determine nutritional content or design and print menus
Legal Studies	• undertake research of precedents (database) or access some of the legal libraries or bulletin boards
Tourism Studies	• design room and table layouts for a banquet or access the travel databases
Communication Technology	• apply knowledge of desktop publishing software in projects requiring layout and design
Financial Management	• apply knowledge of spreadsheets and financial management software to manage personal and business finances
Design Studies	• use understanding of software applications as a basis for learning about computer-assisted design software
Enterprise and Innovation	• use competency in productivity software packages to prepare proposals and analyze the financial implications of ventures
Career Transitions	• use competency in word processing and graphic design to prepare resumes and related correspondence

Note that the project modules from the Career Transitions strand may be combined with modules from the Information Processing strand to provide increased opportunity for students to develop expertise and refine their competencies in a particular module or modules. For example, the project modules could enhance the programming theme with the following projects:

- machine language programming
- programming graphics
- dynamic variables
- systems design/analysis
- programming simulations.

Potential linkages of Information Processing with other strands, determined by course emphasis and area of specialization, are identified in this section (see "Information Processing: Connections with Other CTS Strands," page H.6, and "Information Processing: Connections Across the Curriculum," page H.7).

Many Information Processing modules can be effectively integrated into other strands. For example:

Communication Technology	supporting layout and design concepts: • Graphics Tools, Electronic Publishing 1–2
Electro-Technologies	supporting the computer logic systems: • Programming 1–5 • Programming Applications 1–3
Management and Marketing	supporting layout and design concepts used in promotion and in setting up a retail store: • Graphics Tools, Electronic Publishing 1–2 • Multimedia Authoring 1 and 2 supporting the writing process in communications strategies: • Keyboarding 1–4 • Word Processing 1–3 • Correspondence, Reports, Tables/Forms supporting records management systems: • Database 1 and 2

With Other Secondary Programs

Many Information Processing modules can be effectively integrated into core and complementary courses.

Potential linkages of Information Processing with other core and complementary subject areas across the curriculum are identified in this section (see "Information Processing: Connections Across the Curriculum," page H.7.

The following linkages identify broad connections to core programs in junior and senior high.

Language Arts and English Social Studies	supporting the research and writing process: • Keyboarding 1–5 • Word Processing 1–3 • Graphics Tools, Electronic Publishing 1–2
Mathematics and Science	supporting problem solving and the organizing, analyzing and presenting of data: • Word Processing 1–3 • Electronic Publishing 1–2 • Spreadsheet 1–2 • Database 1–2 • Information Management Tools • Software Integration 1–3 • Programming 1–5 • Programming Application 1–3

With Practical Arts Courses

Modules in the Information Processing strand replace existing content in the senior high Business Education 10–20–30, Typewriting 10–20–30 and Computer Programming 10–20–30. A detailed correlation of the Information Processing strand to these practical arts courses can be found in this section (see "Information Processing-Correlations with Business Education 10–20–30 and Typewriting 10–20–30," page H.13, "Computer Processing 10–20–30," page H.15, and "Information Processing-Correlations with Practical Arts Courses," page H.17).

TRANSITIONS

To the Community/Workplace

The National Occupational Classification (NOC) chart indicates occupations for which Information Processing provides a foundation. High school students could potentially move into:

- 12 occupations requiring a high school education
- 18 occupations that require further education at a college or technical institution (possibly obtaining advanced standing or preferred entrance in the post-secondary program)
- 10 occupations that require further education at the university level (possibly obtaining preferred entrance into a program).

Information from the National Occupational Classification (NOC) regarding occupations in information processing-related areas that can be accessed upon completion of high school is provided in this section (see "Information Processing: Related Occupations," page H.21).

To Related Post-secondary Programs

An outline of post-secondary institutions in Alberta currently offering programs in information processing-related areas is provided in this section (see "Information Processing: Summary of Related Post-secondary Programs," page H.22).

Information Processing: Connections With Other CTS Strands

	Other CTS Strands																				
Information Processing Modules	Agriculture	Career Transitions	Communication Technology	Community Health	Construction Technologies	Cosmetology Studies	Design Studies	Energy and Mines	Electro Technologies	Enterprise and Innovation	Fashion Studies	Financial Management	Foods	Fabrication Studies	Forestry	Legal Studies	Logistics	Management and Marketing	Mechanics	Tourism Studies	Wildlife
Theme: System Operations																					
INF1010: Computer Operations	▤	▤	■	▤	▤	▤	■	▤	■	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2010: Workstation Operations									■												
INF3010: Hardware/Software Analysis									■												
INF3020: Local Area Networks									■												
INF2190 Telecommunications 1									■												
INF3180 Telecommunications 2									■												
Theme: Text/Data Input																					
INF1020: Keyboarding 1	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2030: Keyboarding 2	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2040: Keyboarding 3	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF3030: Keyboarding 4	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF3040: Keyboarding 4	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF3050: Keyboarding 6	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
Theme: Productivity Software																					
INF1030: Word Processing 1	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF1040: Graphics Tools	▤	▤	■	▤	▤	▤	■	▤	▤	■	▤	▤	▤	▤	▤	▤	▤	▤	▤	■	▤
INF1050: Database 1	▤	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	[illegible]	[illegible]	▤
INF1060: Spreadsheet 1	▤	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	[illegible]	[illegible]	▤
INF2050: Word Processing 2	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF2060: Electronic Publishing 1	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF2070: Database 2	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF2080: Spreadsheet 2	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF2130: Multimedia Authoring 1	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF3060: Word Processing 3	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF3070: Electronic Publishing 2	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF3080: Information Management Tools	▤	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
INF3130: Multimedia Authoring 2	▤	▤	▤	▤	▤	▤	■	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▤
Theme: Applied Processing																					
INF2090: Correspondence		■																■			
INF2100: Reports																		■			
INF2110: Tables/Forms																					
INF2120: Document Production 1																					
INF3090: Word Processing Applications																					
INF3100: Specialization 1																					
INF3110: Specialization 2																					
INF3120: Document Production 2																					
Theme: Dynamic Environment																					
INF1070: Hypermedia Tools	▤	▤	▤	▤	▤	▤	■	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF1090: Information Highway 1	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2140: Process Control					▤				■					▤							
INF2200: Information Highway 2									▤									▤			
INF3140: Expert Systems	▤			■	▤			▤	■				▤	▤	▤						▤
INF3190: Information Highway 3									▤												
INF3200: Internet Services									▤												
Theme: Programming																					
INF1080: Programming 1									■												
INF2150: Programming 2									■												
INF2160: Programming 3									■												
INF2170: Programming 4									■												
INF2180: Programming 5									■												
INF3150: Programming Application 1																					
INF3160: Programming Application 2																					
INF3170: Programming Application 3																					

Provides many direct links with competencies in this strand. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical situations.	■
Provides some links with competencies developed in this strand, usually through the application of related technologies and/or processes.	▤

Information Processing: Connections Across the Curriculum

Across the Curriculum

Information Processing Modules	Junior High							Senior High											
	Language Arts	Social Studies	Mathematics	Science	Health & PLS	Physical Education	Fine Arts	English	Social Studies	Mathematics	Science (General)	Biology	Chemistry	Physics	CALM	Physical Education	Fine Arts	Social Sciences	Second Language
Theme: System Operations																			
INF1010: Computer Operations	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
INF2010: Workstation Operations																			
INF3010: Hardware/Software Analysis																			
INF3020: Local Area Networks																			
INF2190: Telecommunications 1				▤					▤	▤	▤			■					
INF3180: Telecommunications 2				▤					▤	▤	▤			■					
Theme: Text/Data Input																			
INF1020: Keyboarding 1	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2030: Keyboarding 2	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2040: Keyboarding 3	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF3030: Keyboarding 4	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF3040: Keyboarding 5	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF3050: Keyboarding 6	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
Theme: Productivity Software																			
INF1030: Word Processing 1	■	■		■	■	▤	▤	■	■		■	■	■	■	■	▤		■	■
INF1040: Graphics Tools	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	■	▤	▤
INF1050: Database 1			■	■			▤			■	■	■	■	■				▤	
INF1060: Spreadsheet 1		■	■	■			▤		■	■	■	■	■	■					
INF2050: Word Processing 2	▤	▤		▤	▤		▤	▤	▤		▤	▤	▤	▤	▤			▤	▤
INF2060: Electronic Publishing 1	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2070: Database 2																			
INF2080: Spreadsheet 2																			
INF2130: Multimedia Authoring 1	▤	▤	▤	▤	▤	▤		▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF3060: Word Processing 3																			
INF3070: Electronic Publishing 2																			
INF3080: Information Management Tools																			
INF3130: Multimedia Authoring 2	▤	▤	▤	▤	▤	▤		▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
Theme: Applied Processing																			
INF2090: Correspondence	■	■						■	■									■	
INF2100: Reports	■	■		■				■	■		■	■	■	■				■	
INF2110: Tables/Forms				■							■	■	■	■					
INF2120: Document Production 1																			
INF3090: Word Processing Applications																			
INF3100: Specialization 1																			
INF3110: Specialization 2																			
INF3120: Document Production 2																			
Theme: Dynamic Environment																			
INF1070: Hypermedia Tools	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF1090: Information Highway 1	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤	▤
INF2140: Process Control																			
INF2200: Information Highway 2																			
INF3140: Expert Systems																			
INF3190: Information Highway 3																			
INF3200: Internet Services																			
Theme: Programming																			
INF1080: Programming 2			■							■									
INF2150: Programming 2										■									
INF2160: Programming 3										■									
INF2170: Programming 4										■									
INF2180: Programming 5										■									
INF3150: Programming Application 1										■									
INF3160: Programming Application 2										■									
INF3170: Programming Application 3										■									

Provides many direct links with course content. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical contexts.	■
Provides some links with course content, usually through the application of related technologies and/or processes.	▤

LINKAGES — *Information Processing in Junior High*

Course Emphasis	Information Processing Modules	Management & Marketing Modules	Communication Technology Modules	Design Studies Modules
(Theme 1) Design (3 modules)	Computer Operations *INF1010*			The Design Process *DES1020*
	Graphics Tools *INF1040*			

Course Emphasis	Information Processing Modules	Management & Marketing Modules	Communication Technology Modules	Electro-Technologies Modules
(Theme 2) Programming (4 modules)	Computer Operations *INF1010*			Digital Technology 1 *ELT1060*
	Programming 1 *INF1080*			Robotics 1 *ELT1130*
(Theme 3) Written Communications (5 modules)	Computer Operations *INF1010*	Communication Strategies 1 *MAM1030*		
	Keyboarding 1 *INF1020*			
	Word Processing 1 *INF1030*			
	Information Highway 1 *INF1090*			

Course Emphasis	Information Processing Modules	Management & Marketing Modules	Communication Technologies Modules	Design Studies Modules
(Theme 4) Visual Communication (5 modules)	Graphics Tools *INF1040*		Presentation & Comm 1 *COM1010*	The Design Process *DES1020*
	Hypermedia Tools *INF1070*		Animation 1 *COM1070*	

LINKAGES – *Information Processing: Correlations with Practical Arts Courses:†*
Business Education 10–20–30 and Typewriting 10–20–30

Information Processing Modules	Keyboarding 1	Keyboarding 2	Keyboarding 3	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 1	Word Processing 2	Word Processing 3	Correspondence	Reports	Tables & Forms	Software Integration 1	Software Integration 2	Software Integration 3	Electronic Publishing 1	Electronic Publishing 2	Specialization 1	Specialization 2
TYPEWRITING 10-20-30																			
Module 1: Keyboarding																			
• Basic Techniques	✓	✓	✓	✓	✓	✓													
• Skill Development	✓	✓	✓	✓	✓	✓													
• Production Applications																			
Module 2: Keyboarding, Centring and Tabulation																			
• Basic Techniques	✓	✓	✓	✓	✓	✓	✓	✓											
• Skill Development	✓	✓	✓	✓	✓	✓	✓	✓											
• Production Applications	✓	✓	✓	✓	✓	✓	✓	✓											
Module 3: Letters and Essays																			
• Basic Techniques							✓	✓	✓						✓	✓	✓		
• Skill Development							✓	✓	✓						✓	✓	✓		
• Production Applications								✓	✓						✓				
Module 4: Reports																			
• Basic Techniques							✓	✓	✓		✓		✓	✓	✓	✓	✓		
• Skill Development							✓	✓	✓		✓		✓	✓	✓	✓	✓		
• Production Applications							✓	✓	✓		✓		✓	✓	✓	✓	✓		
Module 5: Letters and Tables																			
• Basic Techniques							✓	✓	✓	✓		✓			✓	✓	✓		
• Skill Development							✓	✓	✓	✓		✓			✓	✓	✓		
• Production Applications							✓	✓	✓	✓		✓			✓	✓	✓		
Module 6: Manuscripts																			
• Basic Techniques								✓	✓		✓		✓	✓	✓	✓	✓		
• Skill Development								✓	✓		✓		✓	✓	✓	✓	✓		
• Production Applications								✓	✓		✓		✓	✓	✓	✓	✓		

† September 1997: All practical arts courses replaced by Career and Technology Studies.

BEST COPY AVAILABLE

LINKAGES – *Information Processing: Correlations with Practical Arts Courses:†*
Business Education 10–20–30 and Typewriting 10–20–30 (continued)

Information Processing Modules	Keyboarding 1	Keyboarding 2	Keyboarding 3	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 1	Word Processing 2	Word Processing 3	Correspondence	Reports	Tables & Forms	Software Integration 1	Software Integration 2	Software Integration 3	Electronic Publishing 1	Electronic Publishing 2	Specialization 1	Specialization 2
Module 7: Tables, Business Forms and Financial Reports																			
• Basic Techniques							✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		
• Skill Development							✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		
• Production Applications							✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		
Module 8: Business Correspondence																			
• Basic Techniques							✓	✓	✓	✓			✓	✓	✓	✓	✓		
• Skill Development							✓	✓	✓	✓			✓	✓	✓	✓	✓		
• Production Applications							✓	✓	✓	✓			✓	✓	✓	✓	✓		
Module 9: Specialized Production Applications																			
• Basic Techniques									✓	✓	✓	✓	✓	✓	✓	✓	✓		
• Skill Development									✓	✓	✓	✓	✓	✓	✓	✓	✓		
• Production Applications									✓	✓	✓	✓	✓	✓	✓	✓	✓		
Module 10: Production Projects and Review																			
• Production Applications													✓	✓		✓	✓		
Module 11: Professional Applications I									✓						✓	✓			
Module 12: Professional Applications II																			
• Production Applications									✓				✓	✓	✓	✓	✓		
Module 13: Simulation I																		✓	✓
Module 14: Simulation II																			
• Production Applications																		✓	✓
BUSINESS EDUCATION 10-20-30																			
Module 12: Dicta Typing 1								✓		✓	✓	✓							
Module 13: Dicta Typing 2									✓	✓	✓	✓						✓	
Module 14: Word Processing 1							✓								✓				
Module 15: Word Processing 2								✓		✓	✓	✓	✓		✓			✓	
Module 16: Business Simulation																		✓	✓

† September 1997: All practical arts courses replaced by Career and Technology Studies.

LINKAGES: ***Information Processing: Correlations with Practical Arts Courses:*†**
Computer Processing 10–20–30

Information Processing Modules	Computer Operations	Workstation Operations	Graphics Tools	Database 1	Database 2	Spreadsheet 1	Spreadsheet 2	Hypermedia Tools	Programming 1	Programming 2	Programming 3	Programming 4	Programming 5	Programming Applications 1	Programming Applications 2	Programming Applications 3	Process Control	Expert Systems	Local Area Networks	Hardware/Software Analysis
Module 1: Computer Information Processing																				
• Evolution of Data Processing	✓																			
• Terminology	✓																			
• Characteristics of Information Systems	✓																			
• Information Processing Environment	✓																			
• Data Communications	✓																			
• Issues and Trends	✓																			
Module 2: Overview of Software																				
• Terminology		✓																		
• Legal Constraints of Use of Software	✓	✓																		
• Proper Handling Techniques	✓	✓																		
• Types of Software	✓	✓																		
• Software Applications	✓	✓																		
• Software Use Procedures	✓	✓																		
Module 3: Applications: Data Entry																				
• Data Entry Functions				✓	✓															✓
• Coding Data				✓	✓															✓
• Data Entry Functions				✓	✓															✓
• Generating Reports				✓	✓															✓
Module 4: Applications: Word Processing																				
• Introduction to Information Processing																				
• Software Commands																				
• Input/Output																				

† September 1997: All practical arts courses replaced by Career and Technology Studies.

LINKAGES: ***Information Processing: Correlations with Practical Arts Courses:†***
Computer Processing 10–20–30 (continued)

Information Processing Modules	Computer Operations	Workstation Operations	Graphics Tools	Database 1	Database 2	Spreadsheet 1	Spreadsheet 2	Hypermedia Tools	Programming 1	Programming 2	Programming 3	Programming 4	Programming 5	Programming Applications 1	Programming Applications 2	Programming Applications 3	Process Control	Expert Systems	Local Area Networks	Hardware/Software Analysis
Module 5: Applications: Computer Simulations																				
Module 6: Applications: Data Base				✓	✓															
Module 7: Applications: Electronic Spreadsheet						✓	✓													
Module 8: Overview of Introductory Programming Language									✓											
Module 9: Fundamentals of Input/ Output									✓											
Module 10: Introduction to Advanced Computer Programming Techniques										✓										
Module 11: Advanced Computer Programming Techniques											✓									
Module 12: Extended Programming Project												✓	✓							
Module 13: Introduction to Second Programming Language														✓						
Module 14: Applications in Second Programming Language														✓	✓					
Module 15: Extended Project in Second Programming Language															✓	✓				
Module 16: Graphics			✓																	
Module 17: Systems Analysis and Program Development																		✓		✓
Module 18: Machine/Assembly Language													✓		✓	✓				

† September 1997: All practical arts courses replaced by Career and Technology Studies.

LINKAGES – ***Information Processing: Correlation with Practical Arts Courses:*†**
Typewriting 10–20–30, Business Education 10–20–30 and Computer Processing 10–20–30

	Typewriting 10-20-30	Module 1: Keyboarding	Module 2: Keyboarding, Centring and Tabulation	Module 3: Letters and Essays	Module 4: Reports	Module 5: Letters and Tables	Module 6: Manuscripts	Module 7: Tables, Business Forms and Financial Reports	Module 8: Business Correspondence	Module 9: Specialized Production Applications	Module 10: Production Projects and Review	Module 11: Professional Applications I	Module 12: Professional Applications II	Module 13: Simulation I	Module 14: Simulation II	**Business Education 10-20-30**	Module 12: Dicta Typing 1	Module 13: Dicta Typing 2	Module 14: Word Processing 1	Module 15: Word Processing 2	Module 16: Business Simulation	**Computer Processing 10-20-30**	Module 1: Computer Information Systems	Module 2: Overview of Software	Module 3: Applications: Data Entry	Module 4: Applications: Word Processing	Module 5: Applications: Computer Simulations	Module 6: Applications: Data Base	Module 7: Applications: Electronic Spreadsheet	Module 8: Overview of Introductory Programming Language	Module 9: Fundamentals of Input/Output	Module 10: Intro to Advanced Computer Programming Techniques	Module 11: Advanced Computer Programming Techniques	Module 12: Extended Programming Project	Module 13: Intro to Second Programming Language	Module 14: Applications in Second Programming Language	Module 15: Extended Project in Second Programming Language	Module 16: Graphics	Module 17: Systems Analysis and Program Development	Module 18: Machine/Assembly Language
INTRODUCTORY																																								
Computer Operations																							✓	✓																
Keyboarding 1		✓	✓																																					
Word Processing 1			✓	✓	✓	✓		✓	✓										✓																					
Graphics Tools																																						✓		
Database 1																									✓			✓												
Spreadsheet 1																													✓											
Information Highway 1																																								
Hypermedia Tools																																								
Programming 1																														✓	✓									
INTERMEDIATE																																								
Workstations Operations																								✓																
Telecommunications 1																																								

† September 1997: All practical arts courses replaced by Career and Technology Studies.

LINKAGES – *Information Processing: Correlation with Practical Arts Courses:*†
Typewriting 10–20–30, Business Education 10–20–30 and Computer Processing 10–20–30 (continued)

	Typewriting 10-20-30	Module 1: Keyboarding	Module 2: Keyboarding, Centring and Tabulation	Module 3: Letters and Essays	Module 4: Reports	Module 5: Letters and Tables	Module 6: Manuscripts	Module 7: Tables, Business Forms and Financial Reports	Module 8: Business Correspondence	Module 9: Specialized Production Applications	Module 10: Production Projects and Review	Module 11: Professional Applications I	Module 12: Professional Applications II	Module 13: Simulation I	Module 14: Simulation II	**Business Education 10-20-30**	Module 12: Dicta Typing 1	Module 13: Dicta Typing 2	Module 14: Word Processing 1	Module 15: Word Processing 2	Module 16: Business Simulation	**Computer Processing 10-20-30**	Module 1: Computer Information Systems	Module 2: Overview of Software	Module 3: Applications: Data Entry	Module 4: Applications: Word Processing	Module 5: Applications: Computer Simulations	Module 6: Applications: Data Base	Module 7: Applications: Electronic Spreadsheet	Module 8: Overview of Introductory Programming Language	Module 9: Fundamentals of Input/Output	Module 10: Intro to Advanced Computer Programming Techniques	Module 11: Advanced Computer Programming Techniques	Module 12: Extended Programming Project	Module 13: Intro to Second Programming Language	Module 14: Applications in Second Programming Language	Module 15: Extended Project in Second Programming Language	Module 16: Graphics	Module 17: Systems Analysis and Program Development	Module 18: Machine/Assembly Language
Keyboarding 2		✓	✓																																					
Keyboarding 3		✓	✓																																					
Word Processing 2		✓	✓	✓	✓	✓	✓	✓									✓			✓																				
Electronic Publishing 1				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																											
Database 2																									✓			✓												
Spreadsheet 2																													✓											
Multimedia Authoring 1																																								
Correspondence						✓			✓	✓							✓			✓																				
Reports					✓	✓	✓	✓		✓							✓			✓																				
Tables/Forms						✓		✓		✓							✓	✓		✓																				
Software Integration 1					✓		✓	✓	✓	✓	✓		✓							✓																				
Information Highway 2																																								
Process Control																																								
Programming 2																																✓								
Programming 3																																	✓							
Programming 4																																		✓						
Programming 5																																		✓						✓

† September 1997: All practical arts courses replaced by Career and Technology Studies.

LINKAGES – *Information Processing:* Correlation with Practical Arts Courses:*†
Typewriting 10–20–30, Business Education 10–20–30 and Computer Processing 10–20–30 (continued)

	Typewriting 10-20-30	Module 1: Keyboarding	Module 2: Keyboarding, Centring and Tabulation	Module 3: Letters and Essays	Module 4: Reports	Module 5: Letters and Tables	Module 6: Manuscripts	Module 7: Tables, Business Forms and Financial Reports	Module 8: Business Correspondence	Module 9: Specialized Production Applications	Module 10: Production Projects and Review	Module 11: Professional Applications I	Module 12: Professional Applications II	Module 13: Simulation I	Module 14: Simulation II	**Business Education 10-20-30**	Module 12: Dicta Typing 1	Module 13: Dicta Typing 2	Module 14: Word Processing 1	Module 15: Word Processing 2	Module 16: Business Simulation	**Computer Processing 10-20-30**	Module 1: Computer Information Systems	Module 2: Overview of Software	Module 3: Applications: Data Entry	Module 4: Applications: Word Processing	Module 5: Applications: Computer Simulations	Module 6: Applications: Data Base	Module 7: Applications: Electronic Spreadsheet	Module 8: Overview of Introductory Programming Language	Module 9: Fundamentals of Input/Output	Module 10: Intro to Advanced Computer Programming Techniques	Module 11: Advanced Computer Programming Techniques	Module 12: Extended Programming Project	Module 13: Intro to Second Programming Language	Module 14: Applications in Second Programming Language	Module 15: Extended Project in Second Programming Language	Module 16: Graphics	Module 17: Systems Analysis and Program Development	Module 18: Machine/Assembly Language
ADVANCED																																								
Hardware/Software Analysis																									✓														✓	
Local Area Networks																																								
Telecommunications 2																																								
Keyboarding 4		✓	✓																																					
Keyboarding 5		✓	✓																																					
Keyboarding 6		✓	✓																																					
Word Processing 3				✓	✓	✓	✓	✓	✓	✓		✓	✓					✓																						
Electronic Publishing 2				✓	✓	✓	✓	✓	✓	✓	✓		✓																											
Information Management Tools																																								
Multimedia Authoring 2																																								
Software Integration 3				✓	✓	✓	✓	✓	✓	✓		✓	✓						✓	✓																				

† September 1997: All practical arts courses replaced by Career and Technology Studies.

LINKAGES – *Information Processing: Correlation with Practical Arts Courses:*†
Typewriting 10–20–30, Business Education 10–20–30 and Computer Processing 10–20–30 (continued)

	Typewriting 10-20-30	Module 1: Keyboarding	Module 2: Keyboarding, Centring and Tabulation	Module 3: Letters and Essays	Module 4: Reports	Module 5: Letters and Tables	Module 6: Manuscripts	Module 7: Tables, Business Forms and Financial Reports	Module 8: Business Correspondence	Module 9: Specialized Production Applications	Module 10: Production Projects and Review	Module 11: Professional Applications I	Module 12: Professional Applications II	Module 13: Simulation I	Module 14: Simulation II	**Business Education 10-20-30**	Module 12: Dicta Typing 1	Module 13: Dicta Typing 2	Module 14: Word Processing 1	Module 15: Word Processing 2	Module 16: Business Simulation	**Computer Processing 10-20-30**	Module 1: Computer Information Systems	Module 2: Overview of Software	Module 3: Applications: Data Entry	Module 4: Applications: Word Processing	Module 5: Applications: Computer Simulations	Module 6: Applications: Data Base	Module 7: Applications: Electronic Spreadsheet	Module 8: Overview of Introductory Programming Language	Module 9: Fundamentals of Input/Output	Module 10: Intro to Advanced Computer Programming Techniques	Module 11: Advanced Computer Programming Techniques	Module 12: Extended Programming Project	Module 13: Intro to Second Programming Language	Module 14: Applications in Second Programming Language	Module 15: Extended Project in Second Programming Language	Module 16: Graphics	Module 17: Systems Analysis and Program Development	Module 18: Machine/Assembly Language
Specialization 1														✓	✓			✓		✓	✓						✓													
Specialization 2														✓	✓						✓							✓												
Software Integration 2					✓		✓	✓	✓	✓	✓		✓																											
Information Highway 3																																								
Internet Services																																								
Expert Systems																																							✓	
Programming Application 1																																		✓	✓					
Programming Application 2																																			✓	✓				✓
Programming Application 3																																				✓				✓

† September 1997: All practical arts courses replaced by Career and Technology Studies.

©Alberta Education, Alberta, C[illegible]da

LINKAGES — *INFORMATION PROCESSING: Related Occupations*

Information for this chart was obtained from the National Occupations Classification (NOC) descriptions.

Educational Requirements:

D: High School Education
C: Apprenticeship
B: College or Vocational Education
A: University

Occupation Profile	NOC#	D	C	B	A
Administrative Officer	1221	✓		✓	✓
Computer Engineer	2147				✓
Computer Operator	1421	✓		✓	
Computer Programmer	2163			✓	✓
Computer Service Technologist	2242			✓	✓
Computer Systems Analyst	2162			✓	✓
Correspondence, Publication and Related Clerk	1452	✓			
Data Entry Clerk	1422	✓		✓	
Demographer	2161				✓
Desktop Publishing Specialist	1423			✓	✓
Economist	4162				✓
Executive Assistant	1222	✓		✓	
File Clerk	1413	✓			
General Office Clerk	1411	✓		✓	
Health Record Administrator	0114			✓	
Health Record Technician	1413			✓	
Information Systems Consultant	2162				✓
Librarian	5111			✓	✓
Library Clerk	1451	✓			
Library Technician	5211			✓	
Medical Transcriptionist	1244			✓	
Office Machine Technician	2242			✓	
Receptionist	1414	✓			
Secretaries (except Legal and Medical)	1241	✓		✓	
Survey Interviewers and Statistical Clerks	1454	✓			
Typesetter and Related Occupations	1423			✓	
Typist and Word Processor Operators	1412	✓		✓	

LINKAGES – *Information Processing: Summary of Post-secondary Programs* *

	PUBLIC COLLEGES											APPRENTICESHIP TRADE	PRIVATE COLLEGES						TECH. INST.		Banff Centre	UNIVERSITIES				VOCATIONAL COLLEGES			
	Alberta College of Art & Design	Fairview College	Grande Prairie Regional College	Grant MacEwan Community College	Keyano College	Lakeland College	Lethbridge Community College	Medicine Hat College	Mount Royal College	Olds College	Red Deer College		Alberta College	Augustana University College	Canadian Union College	Concordia College	King's University College, The	North American Baptist College	Northern Alberta Institute of Technology	Southern Alberta Institute of Technology		Athabasca University	University of Alberta	University of Calgary	University of Lethbridge	AVC - Calgary	AVC - Edmonton	AVC - Lac La Biche	AVC - Lesser Slave Lake
Business/Business Administration and Commerce			2t	2t	2t	1t	V	1t2t	2t		2t			1t	B	B2t	B					2tB (3y)	BMP hD	BMP hD	BM				
Business Administration		CD	CD	C	CD	D	CD	CD	CD	D	CD		D(10 m)		D				D	CD		C			C			C1t	C
Management		D	D	CD		D	CD	D2t	D2t	CD	C2t				B				VC D	CD	V	B	C	C	CD	V			C
Clerical		D	D	CD		D	CD	D2t	D2t	CD	C2t				B				VC D	C		C				C	C	C	C
Court Reporter																			D										
Medical Clerical/Medical Transcription				C							D		VD		C				C							C			
Office Admin./Records Management		C	CD		CD	C	C	C		C	CD								CD	C									
Secretarial Training		C	CD	C	CD	C	CD	C	C	C	D		VD	C	C				VC D	CD						C	C	C	C
Word Processing/Data Entry/Microcomputer		C	CD				C	C			D		C	C	C				VC D	CD						V	C		V
Advertising/Media Sales/Public Relations				D			D		D											VD									
Audio and/or Visual Communications	D(4 y)			D				D(3y) 3t										V		VD			BM						
Cinema, Radio & Television Arts				D			D		D										D	D	V								
Communications Arts/Studies /Journalism Arts			1t	CD			D	1t2t	D						V			V		VD	V			BM	2t				
Printing and Graphic Arts																			VC	VD							VC		
Computer/Microcomputer Accounting			CD	C			C	D							1t				VC							4w		C	
Computer Applications							D	CD1t							1t				VC D	V						4w			
Computer Maintenance/Repair																			CD	V									
Computer Management/Management Information Systems				D	D														VC			CB	C		CBM				
Computer Programming (Software)			CD		D	D	D	D			D				1t				CD	VCD			C	C					

*Information adapted from "It's About Time: To Start Thinking About Your Future," Advanced Education and Career Development, 1995.

BEST COPY AVAILABLE

LINKAGES – *Information Processing: Summary of Post-secondary Programs* * (continued)

	PUBLIC COLLEGES												PRIVATE COLLEGES						TECH. INST.			UNIVERSITIES				VOCATIONAL COLLEGES			
	Alberta College of Art & Design	Fairview College	Grande Prairie Regional College	Grant MacEwan Community College	Keyano College	Lakeland College	Lethbridge Community College	Medicine Hat College	Mount Royal College	Olds College	Red Deer College	APPRENTICESHIP TRADE	Alberta College	Augustana University College	Canadian Union College	Concordia College	King's University College, The	North American Baptist College	Northern Alberta Institute of Technology	Southern Alberta Institute of Technology	Banff Centre	Athabasca University	University of Alberta	University of Calgary	University of Lethbridge	AVC - Calgary	AVC - Edmonton	AVC - Lac La Biche	AVC - Lesser Slave Lake
Computer/Computing Science			1t			D		2t	CD 2t		1t			B		B1t				VD		CB	BMPhD	BMPhD	BM				
Computer Marketing & Business Administration									D																				
Desktop Publishing																			C	V						4w			
Computer Engineering Technology							CD	D											D	VD			BMPhD						
Electrical/Electronic Engineering Technologies							CD												CD	D									
Telecommunications Engineering Technology																			CD	D									
Medical/Clerical																			CD	VC		C				C			
Library & Information MangementTechnology				D																D			M						
Mathematics/Statistics/Actuarial Science			2t					1t2t	1t		2t			B	1t	B2t						B	BMPhD	BMPhD	BM				

CODES:

B	Bachelor's Degree	D	Diploma (2 years)	w	weeks
M	Master's Degree	V	Varies	m	months
Ph.D.	Doctoral Degree	1t	One-year transfer	y	years
C	Certificate (1 year or less)	2t	Two-year transfer		

*Information adapted from "It's About Time: To Start Thinking About Your Future", Advanced Education and Career Development, 1995.

354

BEST COPY AVAILABLE

INFORMATION PROCESSING

SECTION I: LEARNING RESOURCE GUIDE

This section of the GSI has been designed to provide a list of resources that support student learning.

Three types of resources are identified:

- Authorized: Resources authorized by Alberta Education for CTS curriculum; these resources are categorized as basic, support, or teaching
- Other: Titles provided as a service to assist local jurisdictions to identify resources that contain potentially useful ideas for teachers. Alberta Education has done a preliminary review of these resources, but further review will be necessary prior to use in school jurisdictions
- Additional: A list of local, provincial and national sources of information available to teachers, including the community, government, industry, and professional agencies and organizations.

The information contained in this Guide, although as complete and accurate as possible as of June 1997, is time-sensitive.

For the most up-to-date information on learning resources and newer editions/versions, consult the LRDC *Buyers Guide* and/or the agencies listed in the Distributor Directory at the end of this section.

CTS is on the Internet.
Internet Address:
http://ednet.edc.gov.ab.ca

TABLE OF CONTENTS

INTRODUCTION I.5
  CTS and the Resource-Based Classroom I.5
  Purpose and Organization of this Document I.5
  How to Order I.6
  Resource Policy I.6

AUTHORIZED RESOURCES I.7
  Basic Learning Resources I.7
  Support Learning Resources I.12
  Teaching Resources I.22
  Information Processing Resources (Correlation Charts) I.27

OTHER RESOURCES I.37

ADDITIONAL SOURCES I.39

DISTRIBUTOR DIRECTORY I.43

357

INTRODUCTION

CTS AND THE RESOURCE-BASED CLASSROOM

Career and Technology Studies (CTS) encourages teachers to establish a resource-based classroom, where a variety of appropriate, up-to-date print and nonprint resources are available. Learning resources identified for CTS strands include print, software, video and CD-ROM formats. Also of significance and identified as appropriate throughout each strand are sources of information available through the Internet.

The resource-based classroom approach accommodates a variety of instructional strategies and teaching styles, and supports individual or small group planning. It provides students with opportunities to interact with a wide range of information sources in a variety of learning situations. Students in CTS are encouraged to take an active role in managing their own learning. Ready access to a strong resource base enables students to learn to screen and use information appropriately, to solve problems, to meet specific classroom and learning needs, and to develop competency in reading, writing, speaking, listening and viewing.

PURPOSE AND ORGANIZATION OF THIS DOCUMENT

The purpose of this document is to help teachers identify a variety of resources to meet their needs and those of the students taking the new CTS curriculum. It is hoped that this practical guide to resources will help teachers develop a useful, accessible resource centre that will encourage students to become independent, creative thinkers.

This document is organized as follows:

- Authorized Resources:
    - – basic learning resources
    - – support learning resources
    - – teaching resources
- Other Resources
- Additional Sources
- Distributor Directory.

Some resources in the guide have been authorized for use in some or all of the CTS strands, e.g., the Career and Technology Studies video series produced by ACCESS: The Education Station. Further information is provided in relevant sections of this resource guide.

Each resource in the guide provides bibliographic information, an annotation where appropriate, and a module correlation to the CTS modules. The distributor code for each entry will facilitate ordering resources. It is recommended that teachers preview all resources before purchasing, or purchase one copy for their reference and additional copies as required.

Distributor Code	Resources		Levels/Mod. No.		
			1	2	3
ACC	Title	Author	1010	2010	3010
	Bibliographic Information				
	Annotation				

Distributor Code - see Distributor Directory

1 = Introductory
2 = Intermediate
3 = Advanced

Indicates module number

HOW TO ORDER

Most authorized resources are available from the Learning Resources Distributing Centre (LRDC) at:

12360 – 142 Street
Edmonton, AB T5L 4X9
Telephone: 403–427–5775 (outside of Edmonton dial 310–0000 to be connected toll free)
Fax: 403–422–9750
Internet: http://ednet.edc.gov.ab.ca/lrdc

Please check LRDC for availability of videos.

RESOURCE POLICY

Alberta Education withdraws learning and teaching resources from the provincial list of approved materials for a variety of reasons; e.g., the resource is out of print; a new edition has been published; the program has been revised. Under section 44 (2) of the *School Act*, school boards may approve materials for their schools, including resources that are withdrawn from the provincial list. **Many school boards have delegated this power to approve resources to school staff or other board employees under section 45 (1) of the *School Act*.**

For further information on resource policy and definitions, refer to the *Student Learning Resources Policy* and *Teaching Resources Policy* or contact:

Learning Resources Unit, Curriculum Standards Branch
Alberta Education
5th Floor, Devonian Building, East Tower
11160 Jasper Avenue
Edmonton, AB T5K 0L2
Telephone: 403–422–4872 (outside of Edmonton dial 310–0000 to be connected toll free)
Fax: 403–422–0576
Internet: http://ednet.edc.gov.ab.ca

Note: Owing to the frequent revisions of computer software and their specificity to particular computer systems, newer versions may not be included in this guide. However, schools may contact the LRDC directly at 403–427–5775 for assistance in purchasing computer software.

Trademark Notices: Microsoft, Access, Excel, FoxPro, Mail, MS-DOS, Office, PowerPoint, Project, Publisher, Visual Basic, Visual C++, Windows, Windows NT, Word, and Works are either registered trademarks or trademarks of Microsoft Corporation. Apple, Mac, Macintosh, and Power Macintosh are either registered trademarks or trademarks of Apple Computer, Inc. Other brand and product names are registered trademarks or trademarks of their respective holders.

AUTHORIZED RESOURCES

BASIC LEARNING RESOURCES

The following basic learning resources have been authorized by Alberta Education for use in the Information Processing curriculum. These resources address the majority of the learner expectations in one or more modules and/or levels. A curriculum correlation appears in the right-hand column.

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Applied Keyboarding.* J.W. Robinson, et. al. South Western Publishing Co. ITP Nelson Canada, 1994. The first text to provide the flexibility of software-specific direction for three of today's popular word process packages. Students master basic keyboarding and optional word processing skills via alphabet keys, numeric keys and document formatting, then apply what they have learned to composition and preparation of letters, memos and reports. A teacher's edition accompanies the text and is available.	1020 1030	2030 2040	3030 3040 3050
LRDC	*Computers!* (5th edition.) Timothy N. Trainor and Diane Krasnewich. McGraw-Hill Companies, Inc., 1996. This text covers technological progress, computer information systems, using software, word-processing and desktop publishing, spreadsheets, graphics, database management, hardware and communications and information systems. An instructor's manual with CD-ROM and study guide have been developed to accompany the text. The instructor's manual is divided into chapters that correspond to the chapter in the text. The chapters include a lecture outline with transparencies, answers to review questions, suggested questions, suggested projects, hand-outs, etc. The study guide includes suggested class/homework assignments, projects and worksheets.	1010 1030 1040 1050 1060		
LRDC	*Computer Concepts.* (2nd edition.) (New Perspectives Series.) J. Parsons and D. Oja. Course Technology, 1996. Introductory Text and Comprehensive Text. Introductory text (Chapters 1-8) and comprehensive text (Chapters 1–14). These texts combine graphic video, sound animation and simulations to teach an overview of key information processing concepts. Instructor's manual to accompany comprehensive text, Course Pak (CD-ROM, Windows Version), and Comprehensive Course Tools (CD-ROM, Windows Version) are also available.	1010 1030 1050 1060	2010 2130	3010 3020 3080
LRDC	*Data Processing Applications.* Sheila Dvorchik and Lesley Wasylenki. Copp Clark Longman Ltd., 1988. A collection of realistic, practical activities that promote the use of problem-solving and decision-making skills. It also includes data processing applications. A teacher's manual and software data disks are available.		2060 to 2120	3060 3070 3090 3100

Basic Learning Resources (Continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*First Byte: An Introduction to Information Processing.* (2nd Edition.) G. Baker and T. Bowen. Oxford University Press, 1996. This resource provides a comprehensive introduction to computer applications. It contains activities suitable for a range of abilities. Step-by-step descriptions of how to use applications such as word processing, databases, graphics, the Internet and more are included.	1010 1030 1040 1050 1060		
LRDC	*Intermediate Word Processing Applications: Job-Based Tasks.* Lloyd D. Brooks. Paradigm Publishing International, 1992. This generic word-processing resource explains how to organize and produce a variety of business documents. Exercises are presented in a simple to complex format. An instructor's guide is available .		2050 2060 2090 2100 2120	3060 3090 3100
LRDC	*Keyboarding: The Bare Essentials.* Sandra D. Ubelacker, Melvin R. Delaney and Donna J. Allan. Copp Clark Longman Ltd., 1992. This text uses an alphanumeric approach to teach the letters and numbers of the keyboard simultaneously. Includes the standard formats of letters, envelopes, memos, displays and reports. A three-page section introduces the 10-key pad.	1010 1020	2030 2040	
LRDC	*Keyboarding and Computer Applications.* J.W. Robinson, et. al. South Western Publishing Co. ITP Nelson Canada, 1995. This text presents the alphanumeric keyboard and 10-key pad and provides ample skill building activities for master level learning. Students begin by learning simple keyboarding skills and then progress to word processing, database and spreadsheet activities. The annotated teacher's edition includes teaching suggestions, enrichment and wrap-up as well as methods of evaluating.	1020 1030 1050 1060		
LRDC	*Keyboarding for Personal Computer Use.* M. Lily Kretchman. John Wiley & Sons, 1987. An introductory level text for learning alphanumeric, service keys and the number pad. Sufficient timed writings are available at a variety of suitable intensity levels. Sufficient practice material is available. Formatting for personal letter, an envelope, a personal business letter and essay/report (bibliography and title page) are included.	1020 1030	2030 2040 2050	

Basic Learning Resources (Continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Mastering Keyboarding Skills.* (2nd edition.) Sandra D. Ubelacker, Rita M. Guest and Gerald McConaghy. Copp Clark Longman Ltd., 1989. Keyboarding skills are present for alphanumeric service and the 10-key pad. Formatting presentation includes displays, enumerations, letters, envelopes, forms and tables, reports (footnotes and bibliography entries) for the introductory and some intermediate levels. Instructions are suitable for both typewriter/computer platforms. A teacher's resource is available.	1020 1030	2030 2040 2090 2100 2110 2120	
LRDC	*Object-Oriented Programming in C++* (MS-DOS). (2nd edition.) R. Lafore. Waite Group Press. 1995. This update edition reflects current developments in C++. A new chapter on templates and exceptions has been added. New examples have been added throughout. Emphasis from programming older TURBO C++ environment to programming in the more sophisticated Borland C++ compiler is included.		2150 2160 2170 2180	3150 3160 3170
LRDC	*Reaches: An Intensive Drill Package.* Shirley Elliott and Peggy Reddekopp. School Prints, 1983. This resource package of black-line masters includes keyboarding drills of various levels. Autobiographies enhance each area as well.	1010 1020	2030 2040 2090 2100 2110	3030 3040 3050
LRDC	*Technology for Production and Decision Making.* (3rd Edition.) J.F. Clark, et. al. South Western Publishing Co. ITP Nelson Canada, 1996. This text introduces computer concepts and applies these concepts to realistic business situations using a variety of commercial software packages. A teacher's manual and student workbook "Reteaching and Enrichment Activities" are available.	1010 1030 1040 1050 1060	2010 2060	3010 3020
LRDC	*World of Computers, The: Applications and Principles.* (2nd print edition.) Rob Kelley. John Wiley & Sons Canada Ltd., 1992. Provides a broad spectrum of up-to-date information, concepts and skills essential to the development of computer literacy and computer applications. It concentrates on four major areas of study: computer hardware systems; software applications; computer uses and their impact on society; and computer programming.	1010 1030 to 1080	2010 2150 to 2180	

BEST COPY AVAILABLE

Basic Learning Resources (continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	*Apple Works® 5.1: The Works.* (Apple Version.) Quality Computers, 1994. Appleworks is an integrated software package. Appleworks combines three popular types of programs - word processor, database and spreadsheet. Appleworks 5.0 requires an enhanced Apple IIe, IIc, IIc+ or IIGS with at least 256k RAM and a 3.5" disk drive. This version supports more efficient recall and management of files, expanded use of macros and improved word processing, database and spreadsheet functions.	1030 1050 1060		
LRDC	*Adobe Pagemaker.* (Windows Version 6.0 and Macintosh Version 6.0.) Adobe Systems (Canada), 1995. Pagemaker gives you the tools and power to create professsional publications on the desktop. Create a variety of publications from newsletters and brochures to catalogs and magazines. Good for beginner and advanced user. **Windows** - System requirements include 486 processor with 8MB of RAM for Windows 95 and 10MB of RAM for Windows 3.1. **Mac** - System requirements include an Apple Macintosh computer with a 68030 processor or later with a minimum of 10MB of RAM or Power Mac with 12MB of RAM.		2060	3070 3090
LRDC	*ClarisWorks.* (Windows Version 4.0 and Macintosh Version 3.0.) Claris Corporation/Claris Canada Inc., 1994. ClarisWorks is an integrated software package. It includes word processing, spreadsheet and database programs.	1030 1050 1060	2050 2070 2080	
LRDC	*Microsoft Excel.* (Windows Version 5.0 and Macintosh Version 5.0.) Microsoft Corporation/Microsoft Canada Inc., 1993/94. Microsoft Excel is a powerful spreadsheet program that also includes Visual Basic and Microsoft Query.	1060	2080 2120	3080 3090 to 3120
LRDC	*Microsoft Mail.* (Windows Version.) Microsoft Corporation/Microsoft Canada Inc., 1993. Electronic mail program.		2050 2090 2100 2110	3060 3090 to 3120
LRDC	*Microsoft Office Standard.* (Windows Version 4.2.) Microsoft Corporation/Microsoft Canada Inc., 1993/94. This Microsoft Office family is the most popular set of programs for Windows. The integrated package includes Word 6.0, Excel 5.0, MS Mail and Powerpoint 4.0.	1030 to 1060	2050 2060 2080 to 2110	3060 3080 3090 to 3120

Basic Learning Resources (continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	*Microsoft Powerpoint.* (Windows Version 4.0.) Microsoft Corporation/Microsoft Canada Inc., 1993. Presentation graphics program has everything you need to quickly turn your ideas into powerfully convincing presentations.	1070	2150 to 2180	3150 to 3170
LRDC	*Microsoft Visual Basic.* (Professional Edition, Windows Version 3.0.) Microsoft Corporation/Microsoft Canada Inc., 1993. A powerful programming system that combines graphical interface design tools and a proven general purpose programming language.	1080	2150 to 2180	3150 to 3170
LRDC	*Microsoft Visual C++.* (Windows, Professional Edition Version 1.5 and Windows NT, 32-Bit Edition.) Microsoft Corporation/Microsoft Canada Inc., 1993. The fastest and easiest way to develop great windows application in C++.	1080	2150 to 2180	3150 to 3170
LRDC	*Microsoft Word*^{TM}. (Windows Version 2.0, Windows Version 6.0 and Macintosh/Power Macintosh Version 6.1.) Microsoft Corporation/Microsoft Canada Inc., 1992/1994. In the version 6, Word for Windows and Word for the Macintosh share the same file format, features, appearance and documentation. Because this version eliminates most of the differences between Windows and Mac, both products are numbered version 6.0.	1030 1050 1060	2050 2090 to 2120	3060 3090 to 3120
LRDC	*Microsoft Works for Windows*^{TM}. (Version 2.0E.) Microsoft Corporation/Microsoft Canada Inc. Works is an integrated software package including word processing, spreadsheet, and database programs.	1030 1050 1060	2050 2070 to 2120	

SUPPORT LEARNING RESOURCES

The following support learning resources are authorized by Alberta Education to assist in addressing some of the learner expectations of a module or components of modules.

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*100+ Desktop Publishing Exercises.* Helen Youth. Prentice Hall, 1990. Exercise book, 1995. A generic application workbook supplying exercises to practise layout using either desktop publishing package or advanced word-processing software. Strong emphasis on editing and layout presentation. Quality samples.		2060 2120	3070 3090 3100
LRDC	*Award Enterprises: An Information Processing Simulation.* Gerald Roussie and Allen Paul. Copp Clark Pitman Ltd./Copp Clark Longman Ltd., 1991. This simulation outlines the amalgamation of two companies that have new hardware and software. A variety of forms on a word processor, database and spreadsheet are used.		2120	3100 3110 3120
LRDC	*Business Desktop Publishing Applications: Job Based Tasks.* (Version 1.0.) V. Lyons et. al. Paradigm Publishing Inc., 1994. Exercise Book and Exercise Disks (3.5"). A group of generic exercises for introductory desktop publishing. An instructor's guide provides teaching suggestions and printouts of sample solutions for each assignment.		2060	
LRDC	*Business Software Applications.* E.J. Coburn, et al. Paradigm Publishing International, 1990. Text and Instructor's Data Disk Package: 5.25" (DOS), 1991. This entry-level textbook has hands-on exercises, and guided assignments provide learn-by-doing instructions. Several word-processing documents, spreadsheets and database files are pre-prepared for assignment. (Software.) An instructor's manual is available.	1010 1030 1050 1060	2010 2050 2060 2070 2080 2120	
LRDC	*Byting Back.* Software Online Support Inc., 1993. Quick reference book to find answers to your computer questions. Provides basic computer information in everyday terms. Detailed table of contents makes for easy reference.	1010	2010	

Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No. 1	2	3
ACC	*Career and Technology Studies: Key Concepts.* Edmonton, AB. ACCESS: The Education Station. A series of videos and utilization guides relevant to all CTS strands. The series consists of: *Anatomy of a Plan; Creativity; Electronic Communication; The Ethics Jungle; Go Figure; Innovation; Making Ethical Decisions; Portfolios; Professionalism; Project Planning; Responsibility* and *Technical Writing.*	all	all	all
LRDC	*Computer Applications.* N. Groneman and S. Jaderstrom. South Western Publishing Co. ITP Nelson Canada, 1994. It is a general textbook that reinforces computer skills for a variety of software. The book includes challenging hands-on excercises for word processing, spreadsheets, databases, desktop publishing and communications. Activities are divided into beginner and advanced applications.	1010 1050 1060	2050 2060 2070 2080	3060
LRDC	*Computer Applications for Business: Step-by-Step Exercises and Applications.* Iris Blanc. Dictation Disc Co., 1990. Introduces word processing, database and spreadsheet concepts through sequential practice material.	1030 1050 1060		
LRDC	*Computer Applications in Business.* Guy Drolet and Monica Taylor. Copp Clark Pitman Ltd., 1989. Covers the major software tools - word processing, databases and spreadsheets. Features computer applications relating to starting a small business, the daily routine of the computer service bureau and applications that require the use of graphics software. Offers the opportunity to reinforce previously learned concepts. A teacher's edition is available.	1030 1050 1060	2120	3100
LRDC	*Cortez Peter's Championship Keyboarding Drills.* (3rd edition.) (Windows 3.1 Version.) Glencoe/McGraw-Hill, 1997. CD-ROM. An individualized diagnostic and perspective method for developing accuracy and speed. To use this software your system must meet the following minimum requirements: 30486 or Pentium CPU 8MB RAM. Contains 3.5" data disk, CD-ROM Program, User's Guide and Site License. An instructor's manual is available.	1010 1020	2030 2040	3030 3040 3050
LRDC	*Data Processing Application: Data Disk.* (Microsoft Works, DOS Version.) Sheila Dvorchik and Lesley Wasylenki. Copp Clark Longman Ltd., 1988. Courseware. See Basic Learning Resources for annotation and module correlation.			

Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*DDC Database*. Iris Blanc and Elinore Hildebrandt. Dictation Disc Co., 1990. Introduces database concepts through exercises and applications designed to develop skills necessary for database manipulation on any software or computer.	1050	2070 2110	
LRDC	*DDC Spreadsheets: Spreadsheets Skill Building Exercises and Applications*. Iris Blanc and Cathy Vento. Dictation Disc Company, 1986. Provides 100 generic developmentally organized operations that incorporate accounting, marketing, management, economic and finance activity exercises that develop spreadsheet skills. Includes glossary of terms and standard grid planner.	1060	2080 2110	3110 3120
LRDC	*Desktop Publishing: Design Basics and Applications*. George H.J. Porozny. Copp Clark Pitman Ltd., 1993. Provides general information that can be used with many DTP programs. As students progress through the text, they make a written record of the steps required to complete procedures relating to the program they are using. This record becomes a valuable reference source.		2060	3070
LRDC	*Desktop Publishing With WordPerfect 5.1*. Lois Larson. Studio Word Processing Ltd. Student Training Manual, 1992. Resource provides the technical terminology/background to understand the typewriter to typesetter to Desktop Publishing transfer plus the WordPerfect Function commands appropriate to achieve layouts using WordPerfect 5.1. A series of exercises are presented complete with instructions that students can replicate. The expected outcome/product is provided.		2060	3070
LRDC	*Flying Fingers: An Introductory Keyboarding Program Books.* (Book I/II, Book III/IV, Book V/VI.) Peggy Reddekopp and Shirley Elliott. School Prints, 1990. An introductory keyboarding course designed for elementary to junior high. Stresses technique rather than speed. This program provides for skill development through monitoring and positive reinforcement. A teacher manual is available.	1010 1020	2030 2040	3030 3040 3050
LRDC	*How Networks Work*. F.J. Derfler, and L. Freed. Copp Clark Longman Ltd., Emeryville, CA, 1993. This book offers original illustrations that graphically unravel the PC network to detail in full colour how each component does its magic and how all the pieces fit together.		2010	3010 3020

Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*How Software Works.* R. White. Cop Clark Longman Ltd., Emeryville, CA, 1993. How Software Works covers all major categories, including operating systems, database management, spreadsheets, word processing, graphics, communications and windows.	1010	2010	3010
LRDC	*Information Systems for You.* S. Doyle. Stanley Thornes (Publishers) Ltd., 1995. The aim of this book is to build the student's knowledge of information systems and information technology. This resource guides the teachers and students towards the problem-solving applications-based approach.	1010		
LRDC	*Intermediate Word Processing Applications: Job-based Tasks.* (DOS 3.5"/DOS 5.25 Version 1.0.) Lloyd D. Brooks. Paradigm Publishing International, 1992. Low density disks with student files and the completed files for the instructor. Both ASCII and WordPerfect versions are provided. See Basic Learning Resources for module correlation.			
LRDC	*Introduction to WordPerfect® 5.1.* Lois Larson. Studio Word Processing Ltd., 1991. Student Training Manual. Student manual contains software manipulation directions as well as good exercises to help strengthen the learning. Note: The actual formatting procedure for specific tables, reports and letters are not covered and would also have to be taught separately, but the exercises contain examples of all three. A teacher training manual is available.	1010 1020 1030	2050	3090
LRDC	*Introduction to WordPerfect® for Windows™.* (Version 5.2.) (DOS Keyboard edition.) Lois Larson. Studio Word Processing Ltd., 1993. Student Training Manual. Manual is ideal for those wishing to switch from a DOS version of WordPerfect to a Windows version. Screen prints help to identify the steps in executing the function. Walk-through exercises are provided to facilitate a hands-on experience for student learning.	1030	2050	3090 3110 3120
LRDC	*Keyboarding for Text Processing.* J. Stananought. Stanley Thornes (Publishers) Ltd., 1995. This text presents keyboarding skills in a simple format. Includes drills and some elementary processing skills.	1020 1030 1050 1060		

Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Mavis Beacon Teaches Typing.* (Version 5.0) (Windows and Macintosh Versions.) Mindscape, Inc. CCT Software Plus, 1996. CD-ROM. This CD-ROM helps students learn to touch-type through a series of games, practice exercises and evaluation. It also includes an owner's manual and user's guide.	1010 1020	2030 2040	
LRDC	*More Data Processing Applications.* Shiela Dvorchick and Lesley Wasylenki. Copp Clark Longman Ltd., 1992. The second text in a series of simulation-based books for advanced computer applications. It includes a collection of software application development practices, desktop publishing, graphics, HyperCard, telecommunication, scanning etc., that use problem-solving/decision-making skills and research skills. A teacher's manual is available.		2060 to 2120	3060 3070 3080 3100
LRDC	*Numbers, to...* P. Reddekopp and S. Elliott. School Prints, 1995. This resource is intended to provide practice for the number pad (introductory). Includes student practice package.	1020		
LRDC	*Omega Desktop, Inc.: A Desktop Publishing Simulation.* Betty L. Boyce, Mary S. Auvil and Patricia D. Whitman. South-Western Publishing Co., 1991. Hands-on computer applications for advanced applications in which students have already learned how to word process. Activities support a variety of general office activities. A manual is available.	1040	2060 2120	3070 3090 3100
LRDC	*Paradigm Timed Writings.* Jack Salem and Richard Featheringham. Paradigm Publishing Inc., 1992. Provides practice of keying various documents including proofread and handwritten copy in a timed environment.	1010 1020	2030 2040	3030 3040 3050
LRDC	*Pine Tree Resorts: An Office Simulation.* Mark Kowalchuk and Carol Lyons. Copp Clark Pitman Ltd., 1986. Handwritten sources offer realistic office situations that enable students to combine thinking skills with keyboarding practice. Includes letters, reports, telephone/telecommunications, itineraries, records and administrative support functions.	1010 1020	2090 to 2120	3100

Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Producing Business Documents: Integrated Projects and In-Baskets.* William M. Mitchell, M. A. Mach and James E. LaBarre. Paradigm Publishing Inc., 1992. Student Practice Set. Provides materials that will help students perfect the skills previously acquired in keyboarding courses. The practice set is designed to enhance previously developed skills and to challenge students to achieve new levels in producing business-related documents. The practice set includes formatting and document preparation of text and graphics, including editing, proofing and revising. Students are encouraged to make use of the hardware and software technology available today. An instructor's guide is available.		2120	3090 to 3120
LRDC	*Programming Applications.* Bob Drake. Copp Clark Pitman Ltd., 1988. A collection of application problems designed to provide students with sufficient practice to achieve programming proficiency. A wide variety of topics are sure to interest students. Programming examples include a "What Happens" section, a debugging section and an exercise section. A teacher's manual is available.	1080	2150 to 2180	
LRDC	*Skill Builders.* (3rd edition.) R.D. Johnson. South Western Publishing Co. ITP Nelson Canada, 1997. A supplemental text providing special skill building drills and time paragraphs designed to improve keyboarding facility.	1020	2030 2040	3030 3040 3050
LRDC	*Software Solutions, Inc.: A Practice Set for the Electronic Office.* Rosemary T. Fruehling and Constance K. Weaver. Gregg Division, McGraw-Hill Book Co., 1989. A 15- to 20-hour simulation that provides practical experience in performing information processing job tasks. Also includes decision-making and human relations situations frequently encountered by information processing workers in their first office position. An instructor's guide and key are available.		2120	3090 to 3120
LRDC	*South-Western Introduction to Basic: Quick Course.* R. Dill. South-Western Publishing Co., Nelson Canada, 1994. This introduction to BASIC programming emphasizes fundamental concepts, structure, design and coding of BASIC programs. The text can be used in conjunction with books about computer applications. A manual is available.	1080	2150 2160	

Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Spreadsheet Applications: Job-Based Tasks*. Joseph C. Otto. Paradigm Publishing Inc., 1993. Text with Data Disk. This practice set consists of three units of spreadsheets projects: Unit 1 - managing business and personal information, Unit 2 - interpreting business and personal information, Unit 3 - presenting numeric information. An instructor's guide (with disks) is provided separately giving outcomes to projects.	1060	2080	
LRDC	*Step-by-Step Skill Building Exercises for the Word Processor*. (2nd edition.) Iris Blanc. Dictation Disc Co., 1989. Covers simple to complex word-processing activities that require a variety of word-processing functions and skills.	1030	2050	3060
LRDC	*Technology for Production and Decision Making*. (3rd edition.) J.F. Clark, et. al. South Western Publishing Co. ITP Nelson Canada, 1996. Student Workbook "Reteaching and Enrichment Activities". See Basic Learning Resources for annotation and module correlation.			
LRDC	*Typing Power Drills*. (2nd Canadian edition.) A.C. Lloyd, et al. McGraw-Hill Ryerson Ltd., 1985. Drill and practice resource for developing speed and accuracy keyboarding skills.	1020	2030	3030 3040 3050
LRDC	*UltraKey*. (Macintosh Version 3.0.) Bytes of Learning Incorporated, SoftChoice Inc., 1990-1994. UltraKey is a computer-based keyboarding instruction program that uses life-like animation to teach users how to type. Every keyboarding skill is demonstrated. When additional help is needed, the program immediately repeats demonstrations. Clear and concise progress reports are generated along with suggestions for improvement and individual reports.	1010 1020	2030 2040	3030 3040 3050

Support Learning Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*UltraKey with UltraKey Enhancer: Grade 3 to Adult.* (Site Licensed Edition for Windows Version 3.0.) Bytes of Learning Inc., SoftChoice Inc., 1995. UltraKey teaches basic keyboarding by touch. All keys, including basic keys, commonly used symbol keys, and the numeric keypad (10-key) are learned through the use of this program. To maximize learning, UltraKey demonstrates every finger action in advance and provides audio feedback as keys are strict. Simple instructions and life-like graphics make UltraKey suitable for most learners, age 8 to adult. This latest version of UltraKey reads aloud all lessons instructions and keyboarding reports, so the program is suitable for even more people than ever.	1010 1020	2030 2040	3030 3040 3050
LRDC	*UltraKey: The Ultimate Keyboarding Tutor.* Bytes of Learning. Kinetic Inc., 1995. CD-ROM. UltraKey is a computer-based instruction program that uses life-action animation to teach users how to type. Every keyboarding skill is demonstrated. When additional help is needed, the program immediately repeats demonstrations. Clear and concise progress reports are generated along with suggestions for improvement and individual reports.	1020	2030 2040	3030 3040 3050
LRDC	*Using WordPerfect® 5.1 as a Database.* Lois Larson. Studio Word Processing Ltd., 1991. Student Training Manual. Contain basic exercises in a database. It is important to understand WordPerfect prior to doing these manuals. A teacher training manual is available.	1050	2070	

Support Learning Resources (continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	*All the Right Type*. E. Beaucamp and D. Vincent. Didatech Software, 1992/1994. Keyboarding software program available in: 3.5"- Apple Version 2.4; 5.25"- Apple Version 2.4; 3.5" - IBM Version 2.5; 5.25"- IBM Version 2.5; Macintosh Version 1.5.2.	1010 1020	2030 2040	
LRDC	*CA-SuperCalc*. (DOS Release 5.5.) Computer Associates International, 1993. SuperCalc offers powerful and versatile features for spreadsheet management, database analyses and visual presentation.	1060	2070	
LRDC	*Canvas*. (Windows Version 3.5.2 and Macintosh Version 3.5.) Deneba Software, 1993. Canvas is ideally suited for applications such as business graphics, technical illustrations, presentations, graphics design, desktop publishing, engineering and architecture.	1040 1070	2060 2130	3070 3130
LRDC	*CorelDraw*. (Windows Version 5.0.) Corel Systems Corporation, 1994. CorelDraw is designed for illustration and graphic design, photo-retouching and bitmap-editing, long and short document publishing, business charting and spreadsheets, presentations, animation and morphing, tracing, OCR and file management.	1040 1070	2060 2120	3070 3130
LRDC	*Harvard Graphics*. (Windows Version 3.0.) Software Publishing Corporation, 1994. Multimedia presentations of charts and slides.	1070		
LRDC	*HyperCard*. (Macintosh Version 2.2.) Apple Computer, Inc., Claris Canada, 1993. HyperCard lets you develop powerful stand-alone applications for customizing business solutions, education courseware, interactive multimedia presentations and more.	1070		

Support Learning Resources (Continued)

Distributor Code	Productivity Software/Programming Systems	Levels/Module No.		
		1	2	3
LRDC	*Microsoft FoxPro: Professional Edition.* (Windows Version 2.6 and Macintosh 2.6.) Microsoft Corporation/Microsoft Canada Inc., 1994. This is a relational database used to manage data and information. Tables and reports can be generated. This package is commonly used in the commercial sector.	1050	2070	3080
LRDC	*Microsoft Project.* (Windows Version 4.0 and Version 4.0 Macintosh/Power Macintosh.) Microsoft Corporation/Microsoft Canada Inc., 1995 **Windows** - Microsoft Project version 4.0 helps create project plans, manage resources, communicate plans/progress to others and manage changes as necessary. It produces a variety of reports (e.g. GANTT charts) and screening options. This version is much easier for beginning users, providing on-line help and cue cards. **Macintosh** - This software helps students create project plans, communicate their plans to others and manage changes as they occur. It can be applied directly in Information Processing Module INF3080, Information Management Tools and can support students learning in all strands.			3080
LRDC	*Microsoft Publisher.* (Windows Version 2.0.) Microsoft Corporation/Microsoft Canada Inc., 1994. A desktop publishing package that allows students to design documents using various graphics, fonts and pictures.		2060	3070
LRDC	*SuperPaint.* (Macintosh Version 3.50.) Aldus Corporation/Adobe Systems Inc., 1993. Combines the features of Macintosh paint, draw and image-processing programs into one powerful, easy-to-use graphics program.	1040	2060	3070
LRDC	*WordPerfect.* (DOS Version 6.1, Windows Version 6.1 and Macintosh Version 3.1.) Novell, Inc., WordPerfect Corporation, 1993/94. WordPerfect is designed to allow users to write better and work smarter, making transitions easier and integration perfect. It supports access to other applications and offers file and macro conversions.	1020 1030	2030 to 2120	3030 to 3070 3090 to 3120

TEACHING RESOURCES

The following teaching resources are authorized by Alberta Education to assist teachers in the instructional process.

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Applied Keyboarding.* J.W. Robinson, et al. South Western Publishing Co. ITP Nelson Canada, 1994. Teacher's Edition. See Basic Learning Resources for annotation and module correlation.			
LRDC	*Award Enterprises: An Information Processing Simulation.* Gerald Roussie and Paul Allen. Copp Clark Pitman Ltd., 1991. Instructor's Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Business Desktop Publishing Applications: Job Based Tasks.* (Version 1.0.) V. Lyons, et al. Paradigm Publishing Inc., 1994. Instructor's Guide. See Support Learning Resources for annotation and module correlation.			
LRDC	*Business Software Applications.* E.J. Coburn, et al. Paradigm Publishing International, 1990. Instructor's Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Computers!* (5th edition.) Timothy N. Trainor and Diane Krasnewich. McGraw-Hill Companies, Inc., 1996. Instructor's Manual with CD-ROM and Study Guide. See Basic Learning Resources for annotation and module correlation.			
LRDC	*Computer Applications in Business.* Guy Drolet and Monica Taylor. Copp Clark Pitman Ltd., 1989. Teacher's Edition. See Basic Learning Resources for annotation and module correlation.			
LRDC	*Computer Concepts.* (2nd edition.) (New Perspectives Series.) J. Parsons and D. Oja. Course Technology, 1996. Instructor's Manual to accompany Comprehensive Text, Course Pak (CD-ROM, Windows Version) and Course Tools (CD-Rom, Windows Version) Comprehensive. See Basic Learning Resources for annotation and module correlation.			

Teaching Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Cortez Peter's Championship Keyboarding Drills.* (3rd edition.) Glencoe/McGraw-Hill, 1997. Instructor's Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Data Processing Applications.* Sheila Dvorchik and Lesley Wasylenki. Copp Clark Pitman Ltd., 1989. Teacher's Manual. See Basic Learning Resources for annotation and module correlation.			
LRDC	*Flying Fingers: An Introductory Keyboarding Program.* Peggy Reddekopp and Shirley Elliott. School Prints, 1990. Teacher's Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Intermediate Word Processing Applications: Job-Based Tasks.* Lloyd D. Brooks. Paradigm Publishing International, 1992. Instructor's Guide. See Support Learning Resources for annotation and module correlation.			
LRDC	*Job Pro for Word Pro.* P. Reddekopp and S. Elliott. School Prints, 1995. Software. This resource has comprehensive student/teacher guides intended to teach word processing. This package has learning materials and module assignments. It also includes assignments on disk.	1030		
LRDC	*Keyboarding and Computer Applications.* J.W. Robinson, et. al. South Western Publishing Co. ITP Nelson Canada, 1995. Teacher's Annotated Edition. See Basic Learning Resources for annotation and module correlation.			
LRDC	*Introduction to WordPerfect 5.1.* Lois Larson. Studio Word Processing Ltd., 1991. Teacher Training Manual. This training manual is for teaching WordPerfect 5.1 to adults or high schools students. It covers concepts that provide information and assignments for the student. The manual for Windows has exercises, but the format is somewhat different than the 5.1 manual.	1010 1020 1030	2050	3090

Teaching Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Mastering Keyboarding Skills 1.* (2nd edition.) Sandra D. Ubelacker and Rita M. Guest. Copp Clark Pitman Ltd., 1990. Teacher's Resource Book. See Basic Learning Resources for annotation and module correlation.			
LRDC	*More Data Processing Applications.* Sheila Dvorchik and Lesley Wasylenki. Copp Clark Pitman Ltd., 1992. Teacher's Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Omega Desktop Inc.: A Desktop Publishing Simulation.* Betty L. Boyce, Mary S. Auvil and Patricia D. Whitman. South Western Publishing Co., 1991. Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Producing Business Documents: Integrated Projects and In-Baskets.* William M. Mitchell, K. A. Mach and James E. LaBarre. Paradigm Publishing International, 1992. Instructor's Guide. See Support Learning Resources for annotation and module correlation.			
LRDC	*Programming Applications.* Bob Drake. Copp Clarke Pitman Ltd., 1989. Teacher's Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Software Solutions, Inc.: A Practice Set for the Electronic Office.* Rosemary T. Fruehling and Constance K. Weaver. Gregg Division, McGraw-Hill Book Co., 1989. Instructor's Manual and Key. See Support Learning Resources for annotation and module correlation.			
LRDC	*South-Western Introduction to Basic: Quick Course.* R. Ruth. South-Western Publishing Co., Nelson Canada, 1994. Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*Spreadsheet Applications: Job-Based Tasks.* Joseph C. Otto. Paradigm Publishing Inc. Instructor's Guide/Disks. See Support Learning Resources for annotation and module correlation.			

Teaching Resources (continued)

Distributor Code	Resources	Levels/Module No.		
		1	2	3
LRDC	*Tables & Forms.* (Windows Version.) P. Reddekopp and S. Elliott. School Prints, 1995. Software. This resource includes student exercises for producing tables and forms and uses a sports theme. Table instructions include only data and allow the teacher to make additional requirements. Both rough draft and final copy assignments are included. Teachers should be sensitive to the content in Table 17 and to providing gender balance in other rough draft copies.		2110	
LRDC	*Technology for Production and Decision Making.* (3rd Edition.) J.F. Clark, et. al. South Western Publishers. ITP Nelson Canada, 1996. Teacher's Manual. See Basic Learning Resources for annotation and module correlation.			
LRDC	*Three R's of Publishing, The.* P. Reddekopp and S. Elliott. School Prints. Software. This resource contains a variety of publishing assignments, having students replicate, revise, and re-create documents. A series of disks accompanies the resource. The resource is intended to supplement desktop publishing and word processing production. Notes to the teacher are also included.		2060	
LRDC	*Using WordPerfect 5.1 as a Database.* Lois Larson. Studio Word Processing Ltd., 1992. Teacher Training Manual. See Support Learning Resources for annotation and module correlation.			
LRDC	*World of Computers, The: Applications and Principles.* (2nd print edition.) Rob Kelley. John Wiley & Sons Canada Ltd., 1992. Teacher's Guide. See Basic Learning Resources for annotation and module correlation.			

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

	Format	*Status*	*Junior/Senior High*	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1
LEVEL				1	1	1	1	1	1	1	1	1
THEME				A	B	C	C	C	C	E	F	E
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090
Applied Keyboarding					X	X						
Text	*p*	B	J/S									
Teacher's Edition	*p*	T	J/S									
Award Enterprises: An Information Processing Simulation												
Text	*p*	S	S									
Instructor's Manual	*p*	T	S									
Business Desktop Publishing Applications: Job Based Tasks												
Exercise Book & Disks	*p*	S	S									
Instructor's Guide	*P*	T	S									
Business Software Applications				X		X		X	X			
Text	*p*	S	S									
Instructor's Manual	*p*	T	S									
Byting Back	*p*	S	J/S	X								
Computer Applications	*p*	S	J/S	X				X	X			

	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2
LEVEL	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
THEME	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E
Module Number	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200
Applied Keyboarding		X	X																
Text																			
Teacher's Edition																			
Award Enterprises: An Information Processing Simulation											X								
Text																			
Instructor's Manual																			
Business Desktop Publishing Applications: Job Based Tasks					X														
Exercise Book & Disks																			
Instructor's Guide																			
Business Software Applications	X			X	X	X	X				X								
Text																			
Instructor's Manual																			
Byting Back	X																		
Computer Applications				X	X	X	X												

	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
LEVEL	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
Module Number	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Applied Keyboarding			X	X	X															
Text																				
Teacher's Edition																				
Award Enterprises: An Information Processing Simulation										X	X	X								
Text																				
Instructor's Manual																				
Business Desktop Publishing Applications: Job Based Tasks																				
Exercise Book & Disks																				
Instructor's Guide																				
Business Software Applications																				
Text																				
Instructor's Manual																				
Byting Back																				
Computer Applications						X														

BEST COPY AVAILABLE

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

	Format	Status	Junior/Senior High	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
LEVEL				1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME				A	B	C	C	C	C	E	F	E	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Computer Applications for Business: Step-By-Step Exercises and Applications	p	S	J/S			X		X	X																																										
Computers! (5th Ed.)				X		X	X	X	X																																										
Text	p	B	S																																																
Instructor's Manual/CD-ROM	p/s	T	S																																																
Study Guide	p	T	S																																																
Computer Applications In Business						X		X	X														X																		X										
Text	p	S	S																																																
Teacher's Edition	p	T	S																																																
Computer Concepts (2nd Ed.)				X		X		X	X				X											X								X	X						X												
Introductory Text	p	B	J/S																																																
Comprehensive Text	p	B	J/S																																																
Instructor's Manual to accompany Comprehensive Text	p	T	J/S																																																
Course Pak (CD-ROM)	s	T	J/S																																																
Course Tools (Win Ver.)	s	T	J/S																																																

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

LEVEL				1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME				A	B	C	C	C	C	E	F	E	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
	Format	*Status*	*Junior/Senior High*	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Cortez Peter's Championship Keyboarding Drills (3rd Ed. Win 3.1)	*s*	S	J/S	X	X									X	X																			X	X	X															
Instructor's Manual	*p*	T	J/S																																																
Data Processing Applications																	X	X	X	X	X	X	X														X	X		X	X										
Text	*p*	B	S																																															
Data Disk	*p*	S	S																																															
Teacher's Manual	*p*	T	S																																																
DDC Database	*p*	S	J/S					X										X				X																													
DDC Spreadsheets: Spreadsheets Skill Building Exercises and Applications	*p*	S	S						X										X			X																				X	X								
Desktop Publishing: Design Basics and Applications	*p*	S	S														X																					X													
Desktop Publishing with WordPerfect 5.1	*p*	S	S														X																					X													
First Byte: An Introduction to Informaiton Processing (2nd Ed.)	*p*	B	J	X		X	X	X	X																																										

BEST COPY AVAILABLE

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

LEVEL				1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME				A	B	C	C	C	C	E	F	E	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
	Format	*Status*	*Junior/Senior High*	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Flying Fingers - An Introductory Keyboarding Program Book I/II	*p*	S	J	X	X									X	X																																				
Book III/IV	*p*	S	J	X	X									X	X																																				
Book V/VI	*p*	S	J	X	X									X	X																			X	X	X															
Teacher's Manual	*p*	T	J	X	X									X	X																			X	X	X															
How Networks Work	*p*	S	S										X																			X	X																		
How Software Works	*p*	S	S	X									X																			X																			
Information Systems for You	*p*	S	J	X																																															
Intermediate Word Processing Application: Job - Based Tasks																X	X			X	X		X														X			X	X										
Text	*p*	B	S																																																
Ver. 1 -DOS Disks (3.5" & 5.25")	*p*	S	S																																																
Instructor's Guide	*p*	T	S																																																
Introduction to WordPerfect 5.1				X	X	X										X																								X											
Student Training Manual	*p*	S	J/S																																																
Teacher's Manual	*p*	T	J/S																																																
Introduction to WordPerfect for	*p*	S	J/S			X										X																								X		X	X								
Job Pro for Word Pro	*s*	T	J			X																																													

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

	Format	*Status*	*Junior/Senior High*	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2
LEVEL				1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
THEME				A	B	C	C	C	C	E	F	E	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200
Keyboarding and Computer Applications					X	X		X	X																						
Text	*p*	B	J																												
Teacher's Annotated Edition	*p*	T	J																												
Keyboarding for Personal Computer Use	*p*	B	J/S	X	X									X	X	X															
Keyboarding for Text Processing	*p*	S	J		X	X		X	X																						
Keyboarding: The Bare Essentials	*p*	B	J/S	X	X									X	X																
Mastering Keyboarding Skills I, (2nd Ed.)					X	X								X	X					X	X	X	X								
Text	*p*	B	S																												
Teacher's Resource Book	*p*	T	S																												
Mavis Beacon Teaches Typing (Ver. 5 - Win)	*p/s*	S	J/S	X	X									X	X																
More Data Processing Applications																	X	X	X	X	X	X	X								
Text	*p*	S	S																												
Teacher's Manual	*p*	T	S																												

	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
LEVEL	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
Module Number	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Keyboarding and Computer Applications																				
Text																				
Teacher's Annotated Edition																				
Keyboarding for Personal Computer Use																				
Keyboarding for Text Processing																				
Keyboarding: The Bare Essentials																				
Mastering Keyboarding Skills I, (2nd Ed.)																				
Text																				
Teacher's Resource Book																				
Mavis Beacon Teaches Typing (Ver. 5 - Win)																				
More Data Processing Applications						X	X	X		X										
Text																				
Teacher's Manual																				

BEST COPY AVAILABLE

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

LEVEL				1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME				A	B	C	C	C	C	E	F	E	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
	Format	*Status*	*Junior/Senior High*	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Numbers, too ... (Includes Student Practice Package)	*p*	S	J		X																																														
Object-Oriented Programming in C++ (2nd Ed., MS-DOS)	*p*	B	S																							X	X	X	X																	X	X	X			
Omega Desktop, Inc. A Desktop Publishing Simulation	*p*	S	S				X										X						X															X		X	X										
Manual	*p*	T	S																																																
100+ Desktop Publishing Exercises	*p*	S	J/S														X						X															X		X	X										
Paradigm Timed Writings: Workbook	*p*	S	J/S	X	X									X	X																			X	X	X															
Pine Tree Resorts: An Office Simulation	*p*	S	S	X	X															X	X	X	X																		X										
Producing Business Documents: Integrated Projects and In-Baskets																							X																	X	X	X	X								
Student Practice Set	*p*	S	S																																																
Instructor's Guide	*p*	T	S																																																
Programming Applications												X															X	X	X	X																						
Text	*p*	S	J/S																																																
Teacher's Manual	*p*	T	J/S																																																

389

390

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

LEVEL				1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME				A	B	C	C	C	C	E	F	E	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
	Format	Status	Junior/Senior High	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Reaches An Intensive Drill Package	*p*	B	J/S	X	X									X	X					X	X	X												X	X	X															
Skill Builders (3rd Ed.)	*p*	S	J/S		X									X	X																			X	X	X															
Software Solutions, Inc.: A Practice Set for the Electronic Office	*p*	S	S																				X																	X	X	X	X								
Instructor's Manual and Key	*p*	T	S																																																
South-Western Introduction to Basic: Quick Course											X															X	X																								
Text	*p*	S	J/S																																																
Manual	*p*	T	J/S																																																
Spreadsheet Applications: Job Based Tasks									X										X																																
Text	*p*	S	J/S																																																
Instructor's Guide and disks	*p/s*	T	J/S																																																
Step-by-Step Skill Building Exercises for the Word Processor (2nd Ed.)	*p*	S	J/S			X										X																					X														
Tables & Forms (Win Ver)	*s*	T	S																			X																													
Technology for Production and Decision Making (3rd Ed.)				X		X	X	X	X				X				X															X	X																		
Text	*p*	B	J/S																																																
Student Workbook	*p*	S	J/S																																																
Teacher's Manual	*p*	T	J/S																																																

BEST COPY AVAILABLE

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

	Format	Status	*Junior/Senior High*	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1
LEVEL				1	1	1	1	1	1	1	1	1
THEME				A	B	C	C	C	C	E	F	E
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090
Three R's of Publishing	*s*	T	S									
Typing Power Drills (2nd Cdn. Ed.)	*p*	S	J/S		X							
Ultrakey (Mac Ver. 3.0)	*s*	S	J/S	X	X							
Ultrakey with Ultrakey Enhancer: Grade 3 to Adult	*s*	S	J/S	X	X							
UltraKey: The Ultimate Keyboarding Tutor	*s*	S	J/S		X							
Using WordPerfect 5.1 as a Database								X				
Student Training Manual	*p*	S	S									
Teacher Training Manual	*p*	T	S									
World of Computers, The: Applications and Principles				X		X	X	X	X	X	X	
Text	*p*	B	J/S									
Teacher's Guide	*p*	T	J/S									

	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2
LEVEL	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
THEME	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E
Module Number	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200
Three R's of Publishing					X														
Typing Power Drills (2nd Cdn. Ed.)		X																	
Ultrakey (Mac Ver. 3.0)		X	X																
Ultrakey with Ultrakey Enhancer: Grade 3 to Adult		X	X																
UltraKey: The Ultimate Keyboarding Tutor		X	X																
Using WordPerfect 5.1 as a Database						X													
Student Training Manual																			
Teacher Training Manual																			
World of Computers, The: Applications and Principles	X													X	X	X	X		
Text																			
Teacher's Guide																			

	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
LEVEL	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
Module Number	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Three R's of Publishing																				
Typing Power Drills (2nd Cdn. Ed.)			X	X	X															
Ultrakey (Mac Ver. 3.0)			X	X	X															
Ultrakey with Ultrakey Enhancer: Grade 3 to Adult			X	X	X															
UltraKey: The Ultimate Keyboarding Tutor			X	X	X															
Using WordPerfect 5.1 as a Database																				
Student Training Manual																				
Teacher Training Manual																				
World of Computers, The: Applications and Principles																				
Text																				
Teacher's Guide																				

©Alberta Education, Alberta, C[illegible]da

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

	Format	Status	Junior/Senior High	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
LEVEL				1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME				A	B	C	C	C	C	E	F	E	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
PRODUCTIVITY SOFTWARE/PROGRAMMING SYSTEMS																																																			
Adobe Pagemaker (Win/Mac Ver. 6.0)	s	B	S														X																					X		X											
All the Right Type	s	S	J/S	X	X									X	X																																				
Apple Works 5.1: The Works (Apple Ver.)	s	B	J			X		X	X																																										
CA-SuperCalc (DOS Rel. 5.5)	s	S	J/S						X									X																																	
Canvas (Win/Mac Ver. 3.5)	s	S	J/S				X			X							X							X														X						X							
ClarisWorks (Win/Mac Ver. 3.0)	s	B	J/S			X		X	X							X		X	X																																
CorelDRAW (Win. Ver. 5.0)	s	S	J/S				X			X							X						X															X						X							
Harvard Graphics (Win. Ver. 3.0)	s	S	J							X																																									
HyperCard (Mac. Ver. 2.2)	s	S	J							X																																									
Microsoft Excel (Win/Mac Ver. 5.0)	s	B	J/S						X										X				X																X	X	X	X	X								
Microsoft FoxPro: Professional Edition (Win/Mac 2.6)	s	S	S					X										X																					X												
Microsoft Mail (Win)	s	B	S													x				X	X	X															X			X	X	X	X								

395

396

INFORMATION PROCESSING RESOURCES

THEME CODE:
A. System Operations
B. Text/Data Input
C. Productivity Software
D. Applied Processing
E. Dynamic Environment
F. Programming

FORMAT CODE:
p - Print
v - Video
s - Software

STATUS CODE:
B - Basic
S - Support
T - Teaching
O - Other

LEVEL CODE:
1 - Introductory
2 - Intermediate
3 - Advanced

JR/SR HIGH CODE:
J - Junior High
S - Senior High

	Format	*Status*	*Junior/Senior High*	Computer Operations	Keyboarding 1	Word Processing 1	Graphics Tools	Database 1	Spreadsheet 1	Hypermedia Tools	Programming 1	Information Highway 1
LEVEL				1	1	1	1	1	1	1	1	1
THEME				A	B	C	C	C	C	E	F	E
Module Number				1010	1020	1030	1040	1050	1060	1070	1080	1090
Microsoft Office Standard (Win Ver 4.2)	*s*	B	J/S			X	X	X	X			
Microsoft Powerpoint (Win Ver. 4.0)	s	B	J/S							X		
Microsoft Project (Win/Mac /PowerMac Ver. 4.0)	*s*	S	S									
Microsoft Publisher (Win Ver. 2.0)	*s*	S	S									
Microsoft Visual Basic (Professional Ed. Ver 3.0)	s	B	S								X	
Microsoft Visual C++ (Professional Ed.)	*s*	B	J/S			X						
Microsoft Word	*s*	B	J/S			X		X	X			
Microsoft Works for Windows	*s*	B	J/S			X		X	X			
SuperPaint (Mac. Ver. 1.5)	*s*	S	J/S				X					
WordPerfect	*s*	*S*	J/S		X	X						

	Workstations Operations	Keyboarding 2	Keyboarding 3	Word Processing 2	Electronic Publishing 1	Database 2	Spreadsheet 2	Correspondence	Reports	Tables/Forms	Software Integration 1	Multimedia Authoring 1	Process Control	Programming 2	Programming 3	Programming 4	Programming 5	Telecommunications 1	Information Highway 2
LEVEL	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
THEME	A	B	B	C	C	C	C	D	D	D	D	C	E	F	F	F	F	A	E
Module Number	2010	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200
Microsoft Office Standard (Win Ver 4.2)				X	X		X	X	X	X									
Microsoft Powerpoint (Win Ver. 4.0)														X	X	X	X		
Microsoft Project (Win/Mac /PowerMac Ver. 4.0)																			
Microsoft Publisher (Win Ver. 2.0)					X														
Microsoft Visual Basic (Professional Ed. Ver 3.0)														X	X	X	X		
Microsoft Visual C++ (Professional Ed.)														X	X	X	X		
Microsoft Word				X				X	X	X	X								
Microsoft Works for Windows				X		X	X	X	X	X	X								
SuperPaint (Mac. Ver. 1.5)					X														
WordPerfect		X	X	X	X	X	X	X	X	X	X								

	Hardware/Software Analysis	Local Area Networks	Keyboarding 4	Keyboarding 5	Keyboarding 6	Word Processing 3	Electronic Publishing 2	Info Management Tools	Software Integration 3	Specialization 1	Specialization 2	Software Integration 2	Multimedia Authoring 2	Expert Systems	Programming Application 1	Programming Application 2	Programming Application 3	Telecommunications 2	Information Highway 3	Internet Services
LEVEL	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
THEME	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	F	A	E	E
Module Number	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200
Microsoft Office Standard (Win Ver 4.2)						X		X	X	X	X	X								
Microsoft Powerpoint (Win Ver. 4.0)															X	X	X			
Microsoft Project (Win/Mac /PowerMac Ver. 4.0)								X												
Microsoft Publisher (Win Ver. 2.0)							X													
Microsoft Visual Basic (Professional Ed. Ver 3.0)															X	X	X			
Microsoft Visual C++ (Professional Ed.)															X	X	X			
Microsoft Word						X			X	X	X	X								
Microsoft Works for Windows																				
SuperPaint (Mac. Ver. 1.5)							X													
WordPerfect			X	X	X	X	X		X	X	X	X								

BEST COPY AVAILABLE

OTHER RESOURCES

These titles are provided as a service only to assist local jurisdictions to identify resources that contain potentially useful ideas for teachers. Alberta Education has done a preliminary review of the resources. However, the responsibility to evaluate these resources prior to selection rests with the user, in accordance with any existing local policy.

Distributor Code	Other Resources	Levels/Module No.		
		1	2	3
KIN	*Your First Cruise: A Beginner's Guide to the Internet.* (Information Superhighways Series.) Cambridge Educational. Kinetic Inc., 1995. Video. This 30-minute video is the most understandable and comprehensive program to date that describes what introduction to the Internet is, how the Internet was developed, access requirements, popular features and how to navigate through the system once you get there.	1090	2200	3190

ADDITIONAL SOURCES

Available to Career and Technology Studies (CTS) teachers, locally and provincially, are many sources of information that can be used to enhance CTS. These sources are available through the community (e.g., libraries, boards, committees, clubs, associations) and through government agencies, resource centres and organizations. Some sources, e.g., government departments, undergo frequent name and/or telephone number changes. Please consult your telephone directory or an appropriate government directory.

The following is a partial list of sources to consider:

TEACHER-LIBRARIANS

Planned and purposeful use of library resources helps students grow in their ability to gather, process and share information. Research activities require access to an adequate quantity and variety of appropriate, up-to-date print and nonprint resources from the school library, other libraries, the community and additional sources. Some techniques to consider are:

- planning together
- establishing specific objectives
- integrating research skills into planning.

Cooperation between the teacher-librarian and the subject area teacher in the development of effectively planned resource-based research activities ensures that students are taught the research skills as well as the subject content. Also see *Focus on Research: A Guide to Developing Student's Research Skills* referenced in the Alberta Education resources section.

ALBERTA EDUCATION SOURCES

Alberta Government telephone numbers can be reached toll free from outside Edmonton by dialing 310–0000.

The following monographs are available for purchase from the Learning Resources Distributing Centre. Refer to the Distributor Directory at the end of this section for address, telephone, fax and Internet address.

Please consult the "Support Documents" section or the "Legal, Service and Information Publications" section in the LRDC *Buyers Guide* for ordering information and costs.

Developmental Framework Documents

- *The Emerging Student: Relationships Among the Cognitive, Social and Physical Domains of Development,* 1991 (Stock No. 161555)

  This document examines the child, or student, as a productive learner, integrating all the domains of development: cognitive, social and physical. It emphasizes the need for providing balanced curriculum and instruction.

- *Students' Interactions Developmental Framework: The Social Sphere,* 1988 (Stock No. 161399)

  This document examines children's perceptual, structural and motor development and how such physical development affects certain learning processes.

- *Students' Physical Growth: Developmental Framework Physical Dimension,* 1988 (Stock No. 161414)

  This document examines children's normal physical growth in three areas: perceptual, structural and motor development. In none of these areas is the child's growth in a single continuous curve throughout the first two decades of life. Physical growth is characterized by periods of rapid growth and periods of slower growth. Consequently, differences and changes in growth patterns may affect the timing of certain learning processes.

Other

- *Focus on Research: A Guide to Developing Students' Research Skills,* 1990 (Stock No. 161802)

  This document outlines a resource-based research model that helps students manage information effectively and efficiently, and gain skills that are transferable to school and work situations. This model provides a developmental approach to teaching students how to do research.

- *Teaching Thinking: Enhancing Learning,* 1990 (Stock No. 161521)

  Principles and guidelines for cultivating thinking, ECS to Grade 12, have been developed in this resource. It offers a definition of thinking, describes nine basic principles on which the suggested practices are based, and discusses possible procedures for implementation in schools and classrooms.

ACCESS: The Education Station

ACCESS: The Education Station offers a variety of resources and services to teachers. For a nominal dubbing and tape fee, teachers may have ACCESS: The Education Station audio and video library tapes copied. ACCESS: The Education Station publishes listings of audio and video cassettes as well as a comprehensive programming schedule.

Of particular interest are the CTS videos, which are available with utilization guides. The guides outline key points in each video and suggest questions for discussion, classroom projects and other activities. Video topics are listed in the Support Learning Resources section of this guide. The videos and accompanying support material can be obtained from ACCESS: The Education Station. Refer to the Distributor Directory at the end of this section for address, telephone, fax and Internet address.

GOVERNMENT SOURCES

National Film Board of Canada (NFB)

The NFB has numerous films and videotapes that may be suitable for Career and Technology Studies strands. For a list of NFB films and videotapes indexed by title, subject and director, or for purchase of NFB films and videotapes, call 1–800–267–7710 (toll free) or Internet address: http://www.nfb.ca

ACCESS: The Education Station and some school boards have acquired duplication rights to some NFB videotapes. Please contact ACCESS: The Education Station or consult the relevant catalogues in your school or school district.

The Edmonton Public Library and the Calgary Public Library have a selection of NFB films and videotapes that can be borrowed free of charge with a Public Library borrower's card. For further information, contact:

Edmonton Public Library
Telephone: 403–496–7000

Calgary Public Library
Telephone: 403–260–2650

For further information contact:

Statistics Canada
Regional Office
8th Floor, Park Square
10001 Bellamy Hill
Edmonton, AB T5J 3B6
Telephone: 403–495–3027
Fax: 403–495–5318
Internet address: http://www.statcan.ca

Statistics Canada produces periodicals, reports, and an annual year book.

Resource Centres

Urban Resource Centres

Instructional Services
Elk Island Public Schools
2001 Sherwood Drive
Sherwood Park, AB T8A 3W7
Telephone: 403–464–8235
Fax: 403–464-8033
Internet Address: http://ei.educ.ab.ca

Learning Resources Centre
Red Deer Public School Board
4747 – 53 Street
Red Deer, AB T4N 2E6
Telephone: 403–343–8896
Fax: 403–347–8190

Instructional Materials Centre
Calgary Separate School Board
6220 Lakeview Drive SW
Calgary, AB T3E 5T1
Telephone: 403–298–1679
Fax: 403–249–3054

School, Student, Parent Services Unit
Program and Professional Support Services Sub Unit
Calgary Board of Education
3610 – 9 Street SE
Calgary, AB T2G 3C5
Telephone: 403–294–8542
Fax: 403–287–9739

After July 1, 1997, please contact the School, Student, Parent Services Unit regarding the relocation of the Loan Pool Resource Unit.

Learning Resources
Edmonton Public School Board
Centre for Education
One Kingsway Avenue
Edmonton, AB T5H 4G9
Telephone: 403–429–8387
Fax: 403–429–0625

Instructional Materials Centre
Medicine Hat School District No. 76
601 – 1 Avenue SW
Medicine Hat, AB T1A 4Y7
Telephone: 403–528–6719
Fax: 403–529–5339

Resource Centre
Edmonton Catholic Schools
St. Anthony's Teacher Centre
10425 – 84 Avenue
Edmonton, AB T6E 2H3
Telephone: 403–439–7356
Fax: 403–433–0181

Instructional Media Centre
Northern Lights School Division No. 69
Bonnyville Centralized High School
4908 – 49 Avenue
Bonnyville, AB T9N 2J7
Telephone: 403–826–3366
Fax: 403–826–2959

Regional Resource Centres

Zone 1

Zone One Regional Resource Centre
P.O. Box 6536
10020 – 101 Street
Peace River, AB T8S 1S3
Telephone: 403–624–3187
Fax: 403–624–5941

Zone 2/3

Central Alberta Media Services (CAMS)
182 Sioux Road
Sherwood Park, AB T8A 3X5
Telephone: 403–464–5540
Fax: 403–449–5326

Zone 4

Information and Development Services
Parkland Regional Library
5404 – 56 Avenue
Lacombe, AB T4L 1G1
Telephone: 403–782–3850
Fax: 403–782–4650
Internet Address: http://rtt.ab.ca.rtt/prl/prl.htm

Zone 5

South Central Alberta Resource Centre (SCARC)
Golden Hills Regional Division
435A Hwy 1
Westmount School
Strathmore, AB T0J 3H0
Telephone: 403–934–5028
Fax: 403–934–5125

Zone 6

Southern Alberta Learning Resource Centre (SALRC)
Provincial Government Administration Building
909 Third Avenue North, Room No. 120
Box 845
Lethbridge, AB T1J 3Z8
Telephone: 403–320–7807
Fax: 403–320–7817

DISTRIBUTOR DIRECTORY

The entries in the Distributor Directory are arranged alphabetically by code.

CODE	Distributor/Address	Contact Via
ACC	ACCESS: The Education Station 3270 – 76 Avenue Edmonton, AB T6B 2N9	403–440–7777 Fax: 403–440–8899 1–800–352–8293 http://www.ccinet.ab.ca/access
KIN	Kinetic Inc. 408 Dundas Street East Toronto, ON M5A 2A5	416–963–5979 Fax: 416–925–0653 1–800–263–6910
LRDC	Learning Resources Distributing Centre 12360 – 142 Street Edmonton, AB T5L 4X9	403–427–5775 Fax: 403–422–9750 http://ednet.edc.gov.ab.ca/lrdc

INFORMATION PROCESSING

SECTION J: SAMPLE STUDENT LEARNING GUIDES

The following pages provide background information, strategies and a template for developing student learning guides. Also included at the end of this section are several sample student learning guides for Information Processing.

A student learning guide provides information and direction to help students attain the expectations defined in a specified CTS module. It is designed to be used by students under the direction of a teacher.

Many excellent student learning guides (SLGs) are available for use and/or are in the process of being developed. While Alberta Education provides a development template accompanied by some samples, most student learning guide development is being done by individuals and organizations across the province (e.g., school jurisdictions, specialist councils, post-secondary organizations). Refer to the *Career & Technology Studies Manual for Administrators, Counsellors and Teachers* (Appendix 11) for further information regarding student learning guide developers and sources.

Note: A student learning guide is not a self-contained learning package (e.g., Distance Learning Module), such as you might receive from the Alberta Distance Learning Centre (ADLC) or Distance Learning Options South (DLOS).

TABLE OF CONTENTS

BACKGROUND INFORMATION J.3
- Components of a Student Learning Guide J.3
- Strategies for Developing Student Learning Guides J.4

SAMPLE STUDENT LEARNING GUIDE TEMPLATE J.5

SAMPLE STUDENT LEARNING GUIDES

- INF1020 Keyboarding 1 .... J.11
- INF1030 Word Processing 1 .... J.21

405

BACKGROUND INFORMATION

A Student Learning Guide (SLG) is a presentation of information and direction that will help students attain the expectations defined in a specified CTS module. It is designed to be used by students under the direction of a teacher. A SLG is not a self-contained learning package such as you might receive from the Alberta Distance Learning Centre (ADLC) or Distance Learning Options South (DLOS).

Each SLG is based on curriculum and assessment standards as defined for a particular CTS module. Curriculum and assessment standards are defined in this document through:

- module and specific learner expectations (Sections D, E and F)
- assessment criteria and conditions (Sections D, E and F)
- assessment tools (Section G).

The SLG is written with the student in mind and makes sense to the student in the context of his or her CTS program. SLGs are designed to guide students through modules under the direction of the teacher. They can be used to guide:

- an entire class
- a small groups of students
- individual students.

In some instances, the Student Learning Guide may also be used as teacher lesson plans. When using SLGs as teacher lesson plans, it should be noted that they tend to be:

- learner-centred (versus teacher-directed)
- activity-based (versus lecture-based)
- resource-based (versus textbook-based).

Components of a Student Learning Guide

The student learning guide format, as developed by Alberta Education, typically has *seven* components as described below.

1. *Why Take This Module?*

   This section provides a brief rationale for the work the student will do, and also establishes a context for learning (i.e., in relation to the strand, a life pursuit, a specific industry, etc.).

2. *What Do You Need To Know Before You Start?*

   In this section, prerequisite knowledge, skills and attitudes considered necessary for success in the module are identified. Prerequisites may include other modules from within the strand or from related CTS strands, as well as generic knowledge and skills (e.g., safety competencies, the ability to measure/write/draw, prior knowledge of basic information relevant to the area of study).

3. *What Will You Know And Be Able To Do When You Finish?*

   This information must parallel and reflect the curriculum and assessment standards as defined for the module. You may find it desirable to rewrite these standards in less formal language for student use.

4. *When Should Your Work Be Done?*

   This section provides a timeline that will guide the student in planning their work. The timeline will need to reflect your program and be specific to the assignments you give your students. You may wish to include a time management chart, a list of all assignments to be completed, and instructions to the student regarding the use of a daily planner (i.e., agenda book) to organize their work.

5. *How Will Your Mark For This Module Be Determined?*

   This section will interpret the assessment criteria and conditions, assessment standards, assessment tools and suggested emphasis as defined for the module within the context of the projects/tasks completed. Accepted grading practices will then be used to determine a percentage grade for the module—a mark not less than 50% for successful completion. (**Note**: A module is "successfully completed" when the student can demonstrate ALL of the exit-level competencies or MLEs defined for the module.)

6. *Which Resources May You Use?*

   Resources considered appropriate for completing the module and learning activities are identified in this section of the guide. The resources may be available through the Learning Resources Distributing Centre (LRDC) and/or through other agencies. Some SLGs may reference a single resource, while others may reference a range of resources. Resources may include those identified in the Learning Resource Guide (Section I) as well as other sources of information considered appropriate.

7. *Activities/Worksheets*

   This section provides student-centred and activity-based projects and assignments that support the module learner expectations. When appropriately aligned with curriculum and assessment standards, successful completion of the projects and assignments will also indicate successful completion of the module.

Strategies for Developing Student Learning Guides

Prior to commencing the development of a student learning guide, teachers are advised to obtain:

- the relevant Guide to Standards and Implementation
- the student learning guide template.

Information communicated to the student in the SLG must parallel and reflect the curriculum and assessment standards as defined for the module. Therefore, critical elements of the Guide to Standards and Implementation that need to be addressed throughout the SLG include:

- module and specific learner expectations
- assessment criteria and conditions
- assessment standards
- assessment tools.

Additional ideas and activities will need to be incorporated into the student learning guide. These can be obtained by:

- reflecting on projects and assignments you have used in delivering programs in the past
- identifying human and physical resources available within the school and community
- networking and exchanging ideas (including SLGs) with other teachers
- reviewing the range of resources (e.g., print, media, software) identified in the Learning Resource Guide (Section I) for a particular module/strand.

Copyright law must also be adhered to when preparing a SLG. Further information and guidelines regarding copyright law can be obtained by referring to the:

- *Copyright Act*
- *Copyright* and the *Can Copy Agreement*.

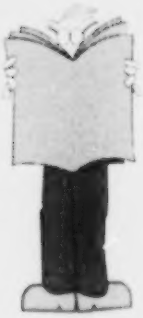
A final task in developing a student learning guide involves validating the level of difficulty/challenge/rigour established, and making adjustments as considered appropriate.

A template for developing student learning guides, also available on the Internet, is provided in this section (see "Student Learning Guide Template," pages J.5–10). Several sample student learning guides are also provided in this section (see "Sample Student Learning Guides," starting on page J.11.

CAREER & TECHNOLOGY STUDIES

SAMPLE STUDENT LEARNING GUIDE TEMPLATE

WHY TAKE THIS MODULE?



WHAT DO YOU NEED TO KNOW BEFORE YOU START?

WHAT WILL YOU KNOW AND BE ABLE TO DO WHEN YOU FINISH?

WHEN SHOULD YOUR WORK BE DONE?

12
1
2
3
4
5
6
7
8
9
10
11

HOW WILL YOUR MARK FOR THIS MODULE BE DETERMINED?

	PERCENTAGE

WHICH RESOURCES MAY YOU USE?

•
•
•
•
•
•

ACTIVITIES/WORKSHEETS

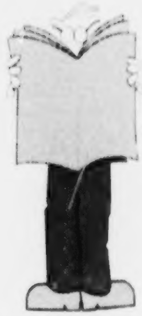
CAREER & TECHNOLOGY STUDIES

INFORMATION PROCESSING

SAMPLE STUDENT LEARNING GUIDE

INF1020 Keyboarding 1

WHY TAKE THIS MODULE?



- Keyboarding skills provide you with the licence and ability to travel the "high-tech information highway" with speed and accuracy!
- Use your keyboarding skills to make written assignments (in school, university, college or on the job) easier to do, and to earn higher marks for work that is neatly and accurately prepared and printed.
- The ability to touch keyboard quickly and accurately will enhance your daily living skills and may open doors to many different career opportunities for you.
- Increase your efficiency in using the workstation equipment and resources.
- Improve your ability in basic competencies including managing your learning and resources, communicating effectively and demonstrating responsibility.

WHAT DO YOU NEED TO KNOW BEFORE YOU START?

Prerequisite: Successful completion of INF1010: Computer Operations

WHAT WILL YOU KNOW AND BE ABLE TO DO WHEN YOU FINISH?

Upon completion of this module you will be able to:

- demonstrate keyboarding competence:
  - text entry at 20 words per minute (wpm)
  - numeric entry at 80 keystrokes per minute (kpm)
  - technique
- apply, consistently, appropriate workstation routines
- demonstrate basic competencies.

WHEN SHOULD YOUR WORK BE DONE?

Use the timelines shown below to help you schedule your time. Prepare a workplan outlining when you will complete the tasks listed below. Submit this workplan to your teacher for approval. Remember you should use your time and resources as efficiently as possible so that you can complete the module and move onto other opportunities to develop your skills and abilities. You may find that you need less time or more time than is indicated. If you need to adjust your workplan, be sure to consult your teacher.

TASK 1: 15 hours (alphabet and build speed and accuracy)
TASK 2: 5 hours (keypad numbers)
TASK 3: 5 hours (punctuation)

You may also wish to use a time-management planning chart to preplan the work that needs to be done in this module. Plan how you will use your class time as well as extra time needed to complete the assignments in this module.

12
1
2
3
4
5
6
7
8
9
10
11

HOW WILL YOUR MARK FOR THIS MODULE BE DETERMINED?

	PERCENTAGE
You must first demonstrate **all** of the competencies required for this module. When you have done this, your percentage mark for the module will be determined as follows:	
• TASK 1–3: ASSIGNMENTS—drills for developing speed and accuracy on alphabetic, punctuation and numeric keys	30%
• TASKS 1 & 3: TEST—enter alphabetic text and basic punctuation keys (.,:;?) at a minimum of 20 words per minute in three timed attempts from straight-copy material with a maximum of one uncorrected error *(see Reference Chart: Keyboarding and Numberpad Rates)*	20%
• TASK 2: TEST—enter numbers on the numeric keypad at a minimum of 80 keystrokes per minute in three timed attempts from straight-copy material of 1 to 3 digit numbers, with a maximum of one uncorrected error *(see Reference Chart: Keyboarding and Numberpad Rates)*	10%
• Consistently demonstrate appropriate fingering, posture and eye focus. Teacher will observe your technique during timings and drills *(see Assessment Checklist: Text–Data Entry for standard)*	30%
• Consistently demonstrate appropriate workstation routines (*see Workstation Routines and Management for standard)*	10%
• Demonstrate effort to manage your learning and resources, communicate effectively and demonstrate responsibility	*basic competency reference guide*

WHICH RESOURCES MAY YOU USE?

- Text: Ubelacker, Guest and McConaghy, *Mastering Keyboarding Skills 1*, 2nd Edition. Toronto: Copp Clark Pitman Ltd., 1989.
- Software: Type! Broderbund Software, Inc. 1989.
- Drill book: Lloyd, Winger, *Typing Power Drills*. McGraw-Hill Ryerson Limited, Toronto, 1985.

ACTIVITIES/WORKSHEETS

BACKGROUND

WORKSTATIONS

With the assistance of your teacher, become familiar with all aspects of your workstation so that you will be comfortable starting up, working on and closing down programs and equipment at the end of each learning session.

Some things you will need to know:

- are you using a networked or stand-alone computer system?
- how do you turn on your equipment?
- how do you log in to the system?
- what programs will you be using?
- how do you load, use, exit or quit the programs you will be using?

Once you are familiar with and comfortable with the "mechanics" of your workstation, you will be ready to roll.

RESPONSIBILITY:

Remember, it is your responsibility to keep your station tidy, books in place and equipment properly turned off at the end of your session. It is also your responsibility to accurately complete all assignments within the time frame.

SOFTWARE INFORMATION/INSTRUCTIONS

Attached to this student guide is a learning package with instructions for using the selected software tutorial package (TYPE! by Broderbund) to learn the alphabetic keyboard (A through Z) and to apply correct keyboarding techniques and skills in order to achieve 20 words per minute.

Also included are instructions for using the specified word-processing software package (WordPerfect 5.1 for DOS), to learn, review and reinforce the alphabetic keyboard (A through Z); and basic punctuation (.,;:?); and numbers using the keypad.

TASK 1: USE TYPE! TO LEARN THE ALPHABETIC KEYBOARD (A through Z)

GOAL -- ability to accurately key in alphabetic letters (A-Z) at a minimum of 20 words per minute.

Read the material in the TYPE! information sheets included in this package. (Information Sheet No. 1.) These sheets will help you get started using the TYPE! program. If you have any questions, discuss them with your teacher before starting the program. Complete the drills and exercises in the TYPE! on-line tutorial.

Continue to work on the TYPE! Build Speed and Accuracy and Special Exercises until you have achieved your goals of mastery of the alphabet keys at 20 wpm.

TASK 2: USE WORDPERFECT 5.1 FOR DOS TO LEARN NUMBERS FROM THE KEYPAD

GOAL -- ability to accurately key in numbers 1–9 at a minimum of 80 keystrokes per minute.

(Note: The TYPE! program teaches numbers from the top row of the keyboard, and teaches them in conjunction with punctuation and alphabetic letters, so you will switch to WordPerfect to drill on keypad numbers.)

Read the material in the WORDPERFECT information sheets included in this package. These sheets give an overview of the WordPerfect function keys you will be using for this module. If you have any questions, discuss them with your instructor before starting the program.

EXERCISES Text: *Mastering Keyboarding Skills 1* (2nd Edition), pages 332–333

Read and follow the instructions in the textbook. Repeat the exercises until you have achieved a rate of 80 keystrokes per minute.

Additional Practice exercises:

Text: *Typing Power Drills*, page 29, drill #57; page 33, drill #62, page 34, drill #64. (Additional practice may be found in business calculation texts.)

You must take three one-minute timings over no more than five class periods to demonstrate touch keyboarding competency of 80 keystrokes a minute with no more than one error. Let your teacher know when you are ready for this keyboarding assessment.

TASK 3: PUNCTUATION (.,;:?) Using WORDPERFECT for DOS 5.1

EXERCISES Text: *Mastering Keyboarding Skills 1* (2nd Edition)

Semicolon	Lesson 1, page 6
Comma	Lesson 5, page 14
Period	Lesson 6, page 16
Colon	Lesson 18, page 42
Question Mark	Lesson 18, page 42

Text: *Typing Power Drills*

Semicolon	drill 78, page 46
Colon	drill 79, page 46
Question Mark	drill 84, page 47

INFORMATION SHEET #1

USING TYPE!

Start up your computer and log into your system.

STOP!
You will require a FORMATTED DATA DISK on which to store your results. If you do not already have a formatted disk, prepare one now.

Insert your formatted data disk in the appropriate drive, then select the TYPE! program from your main menu.

- Press ENTER to go to the TYPE! Main Menu
- With the cursor located by the first item in the main menu, Introduction to the Keyboard, press ENTER again. Take the time to look over the different parts of the screen, and notice that your instructions appear at the bottom of the screen. Work through Introduction to the Keyboard; this should not take longer than 10 minutes. When you are finished the introduction to the keyboard, you will be returned to the TYPE! main menu.

NB: If you forget which fingers belong to which keys, refer to the keyboard/fingering chart included in this package.

NB: Be sure that your CAPS LOCK is OFF! If you get arrows under the letters as you type them it may be because you have your caps lock on. These arrows also indicate keystroke errors. You cannot correct as you type, but if you really mess up, you can press ESC to stop the exercise.

- With the TYPE! Main Menu showing on your screen, move the cursor down next to the words Keyboard Basics, and press ENTER to select the exercises for the letters of the alphabet.
- Take a minute to become familiar with the information on your screen.

  The top left portion of the screen shows a "keyboard." As you type, the letters that you type will appear on this keyboard. The program will track your progress, and as you achieve your goals it will automatically introduce additional letters, until you have covered all of the alphabet keys to the level of 20 words per minute.

  The top right portion of the screen will keep track of your speed and accuracy GOALS as well as your ACTUAL speed and accuracy. It will also let you know which letters you type incorrectly—and keeps track of your "weak" letters.

  At the bottom of the screen you will see the words CURRENT LESSON. Also displayed are all the letters of the alphabet.

START YOUR DRILLS with the cursor under the letter A, by pressing ENTER. Continue to work on Keyboard Basics each day until you have achieved a speed of 20 words per minute for all of the letters of the alphabet. **You must take three one-minute timings over no more than five class periods to demonstrate touch keyboarding competency of 20 words a minute with no more than one error. Let your teacher know when you are ready for this keyboarding assessment.**

There will be several sets of exercises. As you complete each practice line, the results display in the top right corner of your screen. When you have completed a set of exercises, check your overall results.

You may get a **Recommended Exercise:** message. If this message appears, check the menu at the bottom of your screen. You can choose to continue with your current lesson by pressing ENTER, or go to the recommended exercise by moving the cursor to the words "recommended exercise" and pressing ENTER.

If you want to see a breakdown of your results at the end of a training session, select **Display Graphs** from the menu at the bottom of the screen. Read each graph screen carefully, they are self-explanatory!

There are graphs for **results by letter group; results for each finger; alphabet; numbers and symbols; and an error analysis**. You can move from graph to graph by pressing ENTER. Once you have worked your way through the graphs, press ESC (escape on your keyboard) to exit the graphs windows.

AT ANY TIME YOU WANT TO GO BACK TO THE TYPE! MAIN MENU, PRESS **ESC**.

To QUIT the TYPE! program, press ESC to go the TYPE! Main Menu, then press Q (for Quit) and Y (for yes). This will return you to your station main menu.

CAREER & TECHNOLOGY STUDIES

INFORMATION PROCESSING

SAMPLE STUDENT LEARNING GUIDE

INF1030 Word Processing 1

WHY TAKE THIS MODULE?

Word-processing software is used by people in all professions to create documents, and to communicate and transmit information all over the world using networked computer systems.

In this module you will:

- learn the basic commands and functions of a word-processing system (WordPerfect 6.0 for DOS)
- create simple reports, letters and tables for yourself; you will not have to rely on others
- increase your efficiency in using the workstation equipment and resources
- improve your ability in basic competencies including managing your learning and resources, communicating effectively and demonstrating responsibility.

These skills will be useful in your personal life as well as in other courses you are taking in school.

WHAT DO YOU NEED TO KNOW BEFORE YOU START?

Prerequisite: INF1010: Computer Operations

This module requires that you can demonstrate the exit-level competencies defined in *INF1010: Computer Operations.*

WHAT WILL YOU KNOW AND BE ABLE TO DO WHEN YOU FINISH?

Upon completion of this module you will be able to:

- demonstrate correct use of software functions, by producing mailable, properly formatted:
  - paginated reports with headings and references
  - letters with basic components
  - two-column tables with main headings and subheadings
- apply, consistently, appropriate workstation routines
- demonstrate basic competencies.

WHEN SHOULD YOUR WORK BE DONE?

Use the timelines shown below to help you schedule your time. Prepare a workplan outlining when you will complete the tasks listed below. Submit this workplan to your teacher for approval. Remember you should use your time and resources as efficiently as possible so that you can complete the module and move onto other opportunities to develop your skills and abilities. You may find that you need less time or more time than is indicated. If you need to adjust your workplan, be sure to consult your teacher.

TASK 1: approximately 16 hours
TASK 2: approximately 9 hours.

You may also wish to use a time-management planning chart to preplan the work that needs to be done in this module. Plan how you will use your class time as well as extra time needed to complete the assignments in this module.

HOW WILL YOUR MARK FOR THIS MODULE BE DETERMINED?

	PERCENTAGE
You must first demonstrate **all** of the competencies required for this module. When you have done this, your percentage mark for the module will be determined as follows:	
TASK 1: WordPerfect 6.0 DOS functions -Teacher will review Disk/Printout, work will be approved/not approved	30
TASK 2: production of accurate and well-formatted:	
• letters	20
• reports	20
• tables	20
focusing on personal use and demonstrating the use of the software functions learned in Task 1 *(see assessment checklist: Word Processing for standard)*	
• consistently demonstrate appropriate workstation routines *(see Workstation Routine and Management Checklist for standard at introductory level)*	10
• demonstrate effort to manage your learning and resources, communicate effectively and demonstrate responsibility	*basic competency reference chart*

WHICH RESOURCES MAY YOU USE?

- WordPerfect 6.0 for DOS software.
- Mastertrax, The Learning Advantage. *WordPerfect for DOS Version 6.0, Manual Level 1, 1870* (CCI Computer Courseware International).
- Ubelacker, Guest and McConaghy. *Mastering Keyboarding Skills 1*, 2nd Edition.
- Work assigned in other courses.
- Handouts provided with this student guide.

ACTIVITIES/WORKSHEETS

TASK 1:	Obtain the CCI *WordPerfect for DOS Version 6.0 Manual 1870* textbook. The textbook has a prepared data disk with documents that you will retrieve and work on when performing the exercises. With the assistance of your instructor, determine where these documents are located, and whether you will be copying them to your own prepared data disk, or using them from the fileserver. Be sure to save the revised documents to your own formatted data disk. **Complete all of the exercises in the manual, saving your work, to hand in to your teacher.**
TASK 2:	Additional information and worksheets are provided to develop skills in preparation of reports, letters and two-column tables. Complete all of the tasks outlined on the worksheets, referring to the textbook, Ubelacker, Guest and McConaghy *Mastering Keyboard Skills 1* (2nd Edition) **or** produce documents for your own personal use by integrating the work from other courses in completing this task (see information sheets for suggested formatting instructions). **Put together a collection of your work to be assessed including accurate and well-formatted letters, reports and tables that demonstrate the use of basic software functions.**
Ongoing	**Assessment of workstation:** you will be observed during the learning period regarding workstation routines and management.

APPLICATION EXERCISES

REPORTS

LETTERS

TABLES

NB: Read and follow the formatting instructions included with each set of instructions very carefully. Refer to the examples included in this package.

PRODUCTION EXERCISES – REPORTS

TEXT: Mastering Keyboarding Skills 1, Ubelacker, Guest & McConaghy

NB: SPELL CHECK AND PROOFREAD EVERY DOCUMENT BEFORE SAVING

PAGE(S)	PROD. NO.	INSTRUCTIONS
250–251		**REPORT** ☞ Ubelacker text, page 246—SUMMARY OF EDITORS' MARKS (Proofreaders' Marks), read and refer to these editing marks whenever necessary. **FORMATTING GUIDE for REPORTS -** read and refer to the formatting instructions that follow in this manual and use these formatting guidelines for all reports. ☞ Line Length: Use the default settings (60 space line, Left and Right Margins 10). ☞ Header: Create a **HEADER** for each report that has the title of the report flush left and the pages automatically numbered flush right. Suppress the Header for the first page only. ☞ Place the CURSOR **AT THE TOP OF THE FIRST PAGE** then: Press Shift+F8, P, H, A, P, this will bring up the HEADER editing screen; Type the name of the report at the left margin, then press Alt+F6 to place the cursor at the right margin and type the word **Page** leave one spacebar space, then hold down the **Ctrl** key and press the letter **B**, which will automatically number the pages starting with page one, then press **Enter** once to insert an extra blank line. Press **F7** once, this will bring back the formatting menu, then type **u** for suppress (this page only); and then press **1** to suppress all headers, footers and page numbering for this page one. (The header is only visible in PRINT and VIEW) and the code is visible in reveal codes (F11).

250–251 cont'd		☞ Type the TITLE of the report in ALL CAPITAL LETTERS on **Ln 7** on the first page by pressing **Enter** 6 times (this places your title on the first page of a report on line 13 or 2" from the top edge of the page). ☞ **Triple Space** (enter 3 times) after the title. ☞ Set for **Double Spacing** for the body of the report. (Shift+F8, L, S, 2, F7) ☞ Use **AUTOWRAP** at the ends of the lines in the body of the report, do not press enter unless you are starting a new paragraph. **TAB** in once to have the first line of each new paragraph start 5 spaces in from the left margin. ☞ Pages will break automatically as they fill. Page breaks show on the monitor as a single line of dashes. Start each new page on **Ln 1**, right below the soft page break line of dashes. This places your text 1" from the top edge of the paper, and leaves space for your Header to appear in the top margin. ☞ If you have a single line of text or a side heading that you want to have appear on the next page instead of at the bottom of the current page, a page break can be forced with CTRL+Enter—represented by a double line of dashes • Name and Save as **R250**.
290–291		**REPORT with a FOOTNOTE** (Try something new—FOOTNOTE FEATURE!) • Use the WordPerfect FOOTNOTE feature (Ctrl+F7). • Refer to the formatting instructions for the above report (page 250–251), and your formatting notes in this package. • Name and Save as **R290**

PRODUCTION EXERCISES -- LETTERS

Mastering Keyboarding Skills 1, Ubelacker, Guest & McConaghy

NB: SPELL CHECK AND PROOFREAD EVERY DOCUMENT BEFORE SAVING

PAGES	PROD. NO.	INSTRUCTIONS
173		FULL BLOCKED FORMAL BUSINESS LETTERS WITH MIXED PUNCTUATION IN DISPLAY LINES • Set your Left Margin at 15 spaces and your Right Margin at 15 spaces. • Press **Enter** enough times to place your cursor on **Ln 9** (check your **Ln #**). This is the 15th line from the top of the page. • Use the **DATE TEXT CODE** to place the current date in your letter on line 9. (Shift+F5, T) • Enter 4–6 times after the Date and type in the mailing address (the name and address of the person the letter is going to). • Enter twice (double space) to the **Salutation**. Type the salutation followed by a colon (:); do not leave any spaces between the last letter of the salutation and the colon.

173 cont'd		- Enter twice (double space) and type the body of the letter. Single space the body of the letter, use **AUTOWRAP** at the end of the lines (do not press enter); do **NOT Tab** the first line of each paragraph; press **Enter twice** (double space) to start a **new paragraph**. - Enter twice (double space) to the **Complimentary Closing**. Type the closing, capitalizing only the first letter of the first word, e.g.: Yours truly, and follow with a comma. - Press Enter 4-6 times and type the **Signature Block**. - Press Enter twice and type **YOUR INITIALS**, you are the typist -- do not type the initials that are in the textbook. - Read all letters carefully, if there are any references to **ENCLOSURES (or attachments)**, enter twice after your initials, and type in the **Enclosures** notation. - Your letter should look similar to the sample you are typing on page 173, **but** the lines in the **body of your letter may not be exactly the same because you are using AUTOWRAP!** - Name and Save as **L173**

189	1	FULL BLOCKED FORMAL BUSINESS LETTER WITH MIXED PUNCTUATION IN DISPLAY LINES - Complete the letter following proper formatting rules - Name and Save as **L189-1**
201	2	FULL BLOCKED FORMAL BUSINESS LETTER with ENUMERATIONS **NB: This letter is not in proper letter format, and there are missing letter parts. Refer to page 200 for an example of a properly formatted letter.** - Follow the formatting rules for FULL-BLOCKED letters with MIXED PUNCTUATION and formatting rules for ENUMERATIONS within the letter (setting a tab and using the INDENT key F4) - Name and Save as **B201-2**
216	2	FULL-BLOCKED FORMAL BUSINESS LETTER - Type this letter using proper format and including any missing letter parts. Read the letter carefully. Use your own initials and include any enclosure notations. - Name and Save as **B216-2**

PRODUCTION EXERCISES – TABLES

TEXT: Mastering Keyboarding Skills 1, Ubelacker, Guest & McConaghy

NB: SPELL CHECK AND PROOFREAD EVERY DOCUMENT BEFORE SAVING

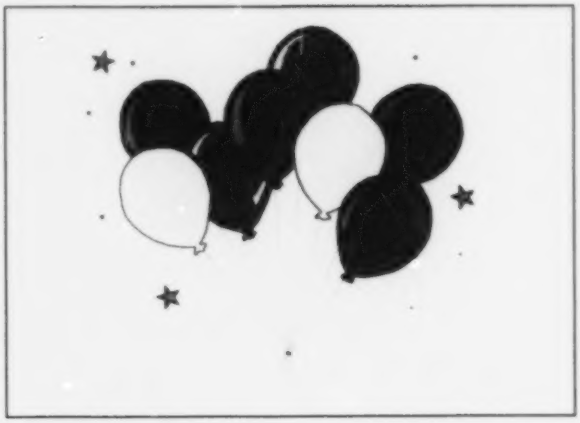
PAGE(S)	PROD. NO.	INSTRUCTIONS NB: USE THE WORDPERFECT TABLES FEATURE FOR THE FOLLOWING EXERCISES
100	1	✔ CAPITALIZE all letters in the TITLE
120	1	✔ CENTRE the headings over the columns
127	1	✔ CENTRE the headings over the columns
130	1	✔ CENTRE the headings over the columns, and SET A DECIMAL TAB for the COST column (which contains amounts of money)

INF1030 Word Processing 1

EXAMPLES: **REPORT**

LETTER

TABLE



FORMATTING GUIDE FOR REPORTS AND ESSAYS *(TITLE Ln 7)*

(one blank linespace)

General Instructions *(subheading)*

by Rhoda Cucheran

(two blank linespaces)

Header *(sideheading)*

The **FIRST CODE** that should appear in your reveal codes when you create a report is your **HEADER** code. Reports have **HEADERS** that are **SUPPRESSED** for the first page and contain the **TITLE** of the report typed at the **LEFT MARGIN** and the automatic **PAGE # (Page ^B) FLUSH RIGHT**. When you create a header, you are temporarily placed in a header editing screen. This is where you type the information that you want to appear in your header, the **TITLE (left flush, all capital letters)**, and the **automatic page numbering code (Page ^B)**. Press **ENTER ONCE** after typing in the page code in order to create a larger space for your header.

Suppressing headers for the first page

EXIT (F7) back to the Page Format Menu in order to **SUPPRESS** the header for the first page. You "suppress" (do not have it print) your header because you do not want both a header and a title on the first page. The choice you make from the suppress header menu is usually the first one, to suppress all headers, footers and page numbers. Even though you suppress the header for the first page the second page will automatically be numbered Page 2.

Report Title *(sideheading)*

The **TITLE** of the report is typed in **ALL CAPITAL LETTERS**, and centred on the first page at **Ln 7** on the monitor Line indicator. If you have a subtitle, double space (leave one blank linespace) between the title and the subtitle. **TRIPLE SPACE** down to the body of the report.

Body of the Report - Linespacing

Before starting to type the **BODY** of your report, **set your linespacing to 2 (for double spacing)**. You will see instructions in typing books that require you to triple space before sideheadings and double space the rest of the report. You have a choice—you may switch back and forth between triple and double spacing, or you may triple space after the title and double space the balance of the report.

Body of the Report – Margins

The **LEFT AND RIGHT MARGINS** are the default settings of **10 Left and 10 Right**. The first line on page 2 of the report, and on all subsequent pages, is typed at **Ln 1** on the monitor line indicator.

Autowrap

Use **AUTOWRAP**, that is, as you type the body of your report let the words wrap at the right margin. Autowrap is indicated by the [SRt] code in **REVEAL CODES**. Only press enter when you want to start a new paragraph, enter is represented in reveal codes as [HRt]. Paragraphs are tabbed in 5 spaces.

Page Breaks

WordPerfect inserts page breaks automatically as the pages are filled. Reveal codes displays automatic page breaks as [SPg]. These page breaks are displayed on the edit screen as single lines of dashes. If you choose to force a page break, you can press **CRTL+Enter**, which puts the code [HPg] in your reveal codes.

The **BOTTOM MARGIN** should remain set at 6 linespaces (1") for all pages. Text will automatically adjust to fit the pages.

Quotations and Special Displays

Single space all special displays, such as subheadings that take two lines, footnotes, enumerations or listings. Single quotations are placed in quotes (" ") within the double spaced text, as shown here. "This is a very short quotation. It has three or fewer short lines and is built right into the double spaces text. Quotation marks are placed at the beginning and end of the quote."[1] Long quotations should be single spaced and indented 5 spaces from both margins, as follows:

> This is a longer quotation (let's pretend). In order to get it to **INDENT 5 spaces from BOTH margins, press Shift+F4**. The quotation will automatically wrap in five spaces from both the left and the right margins. This type of quotation does not have quotation marks around it.[2]

---

[1] Abernethy, John, Quotations for Reports, Random House, 1929, p.234

[2] *ibid.*, p.432

Enumerations

Use the **INDENT (F4)** key for enumerations, and set the tab for Absolute 14. This places your indented text 4 spaces in from the left margin.

1. This is an enumeration. The number appears at the left margin and the text starts in 4 spaces from the left margin. The enumeration is single spaced. If you have more than one enumeration, double space (leave one blank linespace) between them.

2. Like this.

Footnotes

When creating a report, references are made to other textbooks, articles, etc., and these have to be acknowledged. At the end of a quotation, or a reference, you create a **FOOTNOTE** by pressing **(Ctrl+F7), F (footnote), C (create)**. This puts a footnote number in your document and also the same number in a footnote editing screen in which you enter the author, name of reference book or article, publisher and page number as well as any other information for the reference. When you have finished entering the footnote information, press **F7** to go back to your document.

You will see a footnote number, but no footnote unless you REVEAL YOUR CODES, at which time you will see the "NOTE" at the "FOOT" of the page—thus the name "FOOTNOTE."[3] I have created this footnote as an example (you won't find the book).

The nice thing about the footnote feature is that if you change your report and the footnote reference ends up on a different page, the footnote follow and appears on the same page automatically. If you have several footnotes in your document, they will automatically increase in number. If you delete one of them, they will be automatically renumbered.

Tab/Indent Keys

BEWARE of the differences between the terminology **TAB** and **INDENT (F4)**. Textbooks often refer to "indenting" five spaces when in fact they want you to TAB in five spaces.

---

[3] Cucheran, Rhoda, FOOTNOTES ARE FUN, CEC Publishing Company, 1994, p.2000.

Pressing TAB places your cursor at an advanced **Pos**ition horizontally for the first line only, the balance of the lines wrap back to the original left margin.

Press TAB once at the beginning of each new paragraph to start the first line of text 5 spaces in from the left margin, and to leave the balance of the text at the default left and right margins.

Pressing INDENT (F4), will place a new temporary left margin at the position indented to, and all lines will wrap to this new left margin until you press the **ENTER** key. Text will then again start at the original left margin.

Use the **INDENT (F4 and Shift F4)** key for quotations and enumerations.

Base Font

Word processing programs have different **FONTS** (type size and appearance) available. The default font is usually **10 pitch (pica)**, that is, it creates 10 letter spaces per horizontal inch, e.g.:

This is Courier 12 pitch.

This is 14 point.

ωϑχ, χ, θη,ϒ′ϒς′ϒυς′Ωζ (this is Greek, 20 point printed on LASERJET 4mp)

If you want to get more text on fewer pages, you may want to change your **BASE FONT** selection to **12 pitch (elite)**, that is, create 12 letter spaces per horizontal inch.

If you want to place emphasis on a word, phrase, sentence or paragraph, you may choose to use another style of font, or choose **italic** from the font appearance menu.

Title Page

Information on the title page should be displayed attractively,[4] usually **centred on the page.** It should contain the **name of the report** or essay (in all uppercase—capital letters), the **name of the writer**, and the **date the report was typed**, with this information usually being double spaced, and a **HARD PAGE BREAK (CTRL+ENTER)** placed, at the end of the last line on the title page.

---

[4] *Ibid.*, p.276.

BE CREATIVE!!! For effect, you may want to use the **BOLD or UNDERLINE** features; change the **FONT SIZE** to large, or use other special features such as **GRAPHICS** which are available to you through your word processing program.

Example: **(BUSINESS LETTER LETTERHEAD)**

(Left and Right MARGINS are set at 15)

January 21, 1994 *(DATE LINE is on Ln 9)*

*(4-6 blank lines between
the DATE and INSIDE ADDRESS)*

Ms. Renata Jacot
5703 Dalton Drive N.W.
Calgary, Alberta
T3A 1C4

*(INSIDE ADDRESS includes
the name and the address
of the person the letter
is going to.)*

(one blank linespace)

Dear Ms. Jacot: *(SALUTATION)*

(one blank linespace)

In response to your recent request, we are pleased to send you a copy of our article entitled "Exterior Painting, The Quick Home Remedy." *(BODY of LETTER)*

(one blank linespace)

Our Group Merchandising Department prepared this article for consumers. It contains many helpful suggestions on choosing the right paint and tools for the job, preparing the surface to be painted, etc.

(one blank linespace)

Please do not hesitate to call your local Beaver store, or to write our Group Merchandising Department at the above address if you require additional information.

(one blank linespace)

Yours very truly, *(COMPLIMENTARY CLOSING)*

*(4-5 blank linespaces for
handwritten signature)*

*(SIGNATURE BLOCK
Name and title of person
sending the letter)*

Dianne C. Warnick
Press Officer

(one blank linespace)

rc *(INITIALS of typist -- your initials)*

(one blank linespace)

Enclosure

*(include an ENCLOSURE NOTATION
at the very end of the letter,
after the initials, if there is
reference within the text of the
letter indicating that there is an
enclosure -- an invoice, cheque,
catalogue, etc.)*

TABLE Example:

SIDEWALK SALES SPECIALS

Store	Special	Price
Woodwards	Braun Silencio Dryer	$ 25.99
The Bay	Sony Walkman WM-F46	129.88
Shoppers Drug Mart	Magnetic Photo Album	4.77
Pet Fair	Cockatiels	59.80
Hakim Optical	Foster Grant sunglasses	12.00
Sears	Canon SolarCalc	24.66

K. ACKNOWLEDGEMENTS

The Information Processing strand was developed through the cooperative effort of people from schools, post-secondary institutions, professional associations, business, industry, labour, and departments and agencies of the Government of Alberta. Alberta Education would like to extend sincere appreciation to the following individuals and groups.

Career and Technology Studies Advisory Committee

Dawn Arnold	Tofield School
Mike Blackwell	Wetaskiwin Composite High School
Susan deWijk	Lester B. Pearson Senior High School, Calgary
Maryanne Doherty-Poirier	University of Alberta, Edmonton
Lynne Duigou	St. Francis of Assisi School, Edmonton
Darwin Eckstrom	Peace Wapiti Regional Division No. 33
Barry Edgar	Grande Prairie Composite High School
Harold Hayter	Northern Alberta Institute of Technology, Edmonton
George Hildebrandt	School System Representative
Gerry Hunt	Eastglen Composite High School, Edmonton
Kenneth Jacknicke	Post-secondary Education Representative
Graham Johnston	Post-secondary Education Representative
Brenda Kent-Packer	Clarence Sansom Junior High School, Calgary
Bev Klemen	W. R. Myers High School, Taber
Kevin Knibbs	Calgary School District No. 19
Arnold Krause	Department of Education, Culture and Employment, Government of North West Territories
Len Luders	Red Deer School District No. 104
Eva-Jane Lundgard	Edwin Parr Composite Community School, Athabasca
Gordon Murray	Bellerose Composite High School, St. Albert
Jeannette Pawliuk	Edmonton School District No. 7
Sam Perverseff	Alberta Teachers' Association Representative
Connie Peters	School System Representative
Darren Reeder	Business/Industry Representative
Rick Roman	Business/Industry Representative
Barry Stangeland	School System Representative
Gordon Welch	CASS Representative
Gordon Worobec	Alberta Teachers' Association Representative

Information Processing Focus Group

Terry Belanger	Palliser Regional Division No. 26, Lethbridge
Shelli Dubs	TransCanada Pipelines, Calgary
Mel Fisher	Fisher Consulting Enterprises, Lethbridge
Sharon Hick	Cross Cancer Institute, Edmonton
Fran Hill	Calgary School District No. 19
Sharon Horne	Strathmore High School
Marlene Jones	Alberta Research Council, Calgary
Sharon Kashuba	Post Secondary Representative

Information Processing Focus Group (continued)

Dolaine Koch	Bruderheim Elementary-Junior High School
Paul Kubic	Nova Gas International, Calgary
Barbara Latta	Public Works & Services, Government of North West Territories
Diane Lee	Telus Communications, Calgary
Doug MacDormand	Red Deer College
Susan Macklin	Trochu Valley School
Janet McCracken	Alberta Research Council, Calgary
M.W. Petruk	University of Alberta, Edmonton

Development Task

Mike Bester	Lester B. Pearson High School, Calgary
Gordon Booth	Parkland Composite High School, Edson
Judy Clark	James Fowler High School, Calgary
Sharon Horne	Strathmore High School
Tom Oldridge	Chinook's Edge Regional Division No. 5, Innisfail
Peggy Reddekopp	Acme School
June Schroter	Salisbury Composite High School, Sherwood Park
John Schwengler	St. Helena School, Calgary
Ken West	Henry Wise Wood High School, Calgary

Resource Review Committee

Judy Clark	James Fowler High School, Calgary
Laurie Coupland	School System Representative
Fran Hill	Calgary School District No. 19
Rosemary Ollis	Archbishop MacDonald High School, Edmonton
Bill Schlacht	School System Representative
June Schroter	Salisbury Composite High School, Sherwood Park
Ken West	Henry Wise Wood High School, Calgary

Field Review (1992–1993)

Ken Cobb	Will Sinclair High School, Rocky Mountain House
Judy Cruise	Stony Plain Central School
Shirley Elliott	Trochu Valley School
Malcolm Fedoretz	Beacon Hill School, Fort McMurray
Sharon Horne	Strathmore High School
Ivy Hudson	Bowness High School, Calgary
Janice Hyshka	Bonnyville Centralized High School
Shane Keating	School System Representative
Bev Klemen	W.R. Myers High School, Taber
Bruce Lange	Grand Trunk High School, Evansburg
Mark Maris	Parkland Composite High School, Edson
Karen Morden-Babick	Winston Churchill High School, Lethbridge

Field Review (1992–1993) (continued)

Marline Poon	Lester B. Pearson High School, Calgary
Brian D. Scott	Nelson Heights School, Cold Lake
June Schroter	Salisbury Composite High School, Sherwood Park

Field Review (1993–1994)

Heidi Biehler	Wetaskiwin Composite High School
Leslie Collings	Muriel Clayton Middle School, Airdrie
Laurie Coupland	School System Representative
Kerry Coxen	Sturgeon School Division No. 24, Namao
Fay Elsdon	Medicine Hat High School
Judith Gingrich	George McDougall High School, Airdrie
Dave Mertz	Archbishop O'Leary High School, Edmonton
Maureen Molloy	St. Francis High School, Calgary
Rosemary Ollis	Archbishop MacDonald High School, Edmonton
Peggy Reddekopp	Acme School
Patricia Rempel	School System Representative

Assessment Panel (1994–1995)

Mike Bester	Lester B. Pearson Senior High School, Calgary
Gordon Booth	Parkland Composite High School, Edson
Leslie Collings	Muriel Clayton Middle School, Airdrie
Kerry Coxen	Sturgeon School Division No. 24, Namao
Karen Morden-Babick	Winston Churchill High School, Lethbridge
Ken West	Henry Wise Wood High School, Calgary
Shelley Wood	Olds Junior-Senior High School

Assessment Panel (1995–1996)

Mike Bester	Lester B. Pearson Senior High School, Calgary
Leslie Collings	Muriel Clayton Middle School, Airdrie
Kerry Coxen	Sturgeon School Division No. 24, Namao
Dan Donnelly	School System Representative
Elsie Elder	Member at Large, Lethbridge Community College
Gordon Grams	Okotoks Junior High school
Rod Lis	Ecole Secondaire Beaumont High School
Norman Mathew	Ottewell School, Edmonton
Karen Morden-Babick	Winston Churchill High School, Lethbridge
Shelley Wood	Olds Junior-Senior High School

Task Force II (1996–1997)

Leslie Collings	Muriel Clayton Middle School, Airdrie
Kerry Coxen	Sturgeon School Division No. 24, Namao
Dan Donnelly	School System Representative
Rod Lis	Ecole Secondaire Beaumont High School
Norman Mathew	Ottewell School, Edmonton
Shelley Wood	Olds Junior-Senior High School

Alberta Education, Curriculum Standards Branch

Lloyd Symyrozum	Director, Curriculum Standards Branch (Retired)
A. A. (Scotty) Day	Assistant Director, Curriculum Standards Branch (Retired)
Keith Wagner	Director, Curriculum Standards Branch
Susan Lynch	Assistant Director, Curriculum Standards Branch
Sharon Prather	Program Manager, Career and Technology Studies
Mel Fisher	Program Consultant, Information Processing, Career and Technology Studies(1990 - 1994)
Sharon Prather	Program Consultant, Information Processing, Career and Technology Studies (1994 - 1995)
Susan deWijk	Program Consultant, Information Processing, Career and Technology Studies (1995 - 1996)
Betty Leadbeater	Program Consultant, Information Processing, Career and Technology Studies (1996 - 1997)

Document publication and administration

Jennifer Annesley
Kim Blevins
Lila Borhot
Lisa Buckland
Lorraine Crawford
Maria Crudo
Christopher Ewanchuk
Nancy Foulds
Lin Hallett
Dianne Hohnstein
Cori May
Joanne Medisky
Pauline Taylor
Catherine White
Marcie Whitecotton-Carroll
Esther Yong